South Coast
Air Quality Management District
21865 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • http://www.aqmd.gov

Subject: **Notice of Completion of A Draft Supplemental Environmental Impact Report**

Project Title: **1999 Amendment to the 1997 Ozone State Implementation Plan (SIP) Revision for the South Coast Air Basin**

In accordance with the California Environmental Quality Act (CEQA), the South Coast Air Quality Management District (SCAQMD) is the Lead Agency for the proposed amendments to the 1997 Air Quality Management Plan (AQMP). Pursuant to CEQA, the SCAQMD has prepared a Draft Supplemental Environmental Impact Report (SEIR) (attached) to assess potential adverse environmental impacts that may result from implementing the proposed project.

The Notice of Completion and attached document are not SCAQMD applications or forms requiring a response from you. Their purpose is simply to provide information to you on the above project. If the proposed project has no bearing on you or your organization, no action on your part is necessary.

Comments focusing on issues relative to the environmental analysis of the proposed project should be addressed to Mr. Michael Krause (c/o Planning/CEQA) at the address shown above, or sent by FAX to (909) 396-3324, or e-mail to mkrause@aqmd.gov. Comments must be received no later than 5:00 pm on November 5, 1999. If submitting comments, please include your name and phone number.

Public Workshops for the proposed project are scheduled to be held October 12–14, 1999, at various locations throughout the district. Call the SCAQMD Public Information Center for specific times and locations. The Public Hearing for the proposed project is scheduled for December 10, 1999.

Steve Smith

Date: October 6, 1999 **Signature:** _____

Steve Smith, Ph.D.
Program Supervisor

Reference: California Code of Regulations, Title 14, Sections 15082(a), 15103, and 15375

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 E. Copley Drive, Diamond Bar, California 91765-4182

NOTICE OF COMPLETION

Project Title:

Draft Supplemental Environmental Impact Report (SEIR) for the Proposed 1999 Amendment to the 1997 Ozone State Implementation Plan (SIP) Revision for the South Coast Air Basin

Project Location:

South Coast Air Quality Management District: the four-county South Coast Air Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties) and the Riverside County portions of the Salton Sea Air Basin and the Mojave Desert Air Basin.

Description of Nature and Purpose of the Project:

Proposed amendments to the 1997 Ozone SIP Revision for the South Coast Air Basin will include incorporating new short-term control measures, revising adoption and implementation schedules for existing control measures, while providing additional emission reductions for some of the interim milestone years. The control measures are intended to provide greater emission reductions in the near term and demonstrate attainment of the Ozone National Ambient Air Quality Standard and expeditious progress toward attaining state standards. The Draft SEIR concludes that implementation of the proposed project would not result in significant adverse environmental impacts.

Lead Agency:	**Division:**
South Coast Air Quality Management District	Planning, Rule Development and Area Sources

Draft SEIR and all supporting documentation are available at:	**or by calling:**
SCAQMD Headquarters 21865 E. Copley Drive Diamond Bar, CA 91765	(909) 396-3600

Draft SEIR Review Period:

October 7 – November 5, 1999

Scheduled Public Meeting Dates:

Public Workshops: October 12 - 14, 1999, various locations and times
SCAQMD Governing Board Hearing: December 10, 1999; 9:30 a.m.; SCAQMD Headquarters

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Supplemental Environmental Impact Report for the Proposed 1999 Amendment to the 1997 Ozone State Implementation Plan (SIP) Revision for the South Coast Air Basin

October 7, 1999

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CHAPTER 1

INTRODUCTION AND EXECUTIVE SUMMARY

Introduction
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INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) is proposing to amend the ozone portion of the 1997 Air Quality Management Plan (AQMP) to address concerns the United States Environmental Protection Agency (U.S. EPA) has raised in its proposed approval/disapproval of the 1997 Ozone State Implementation Plan (SIP) Revision for the South Coast Air Basin. The proposed 1999 amendments to the 1997 Ozone SIP for the South Coast Air Basin (referred to in this document as the proposed 1999 amendments) would add four new short-term control measures, four new short-term control measures that implement portions of the 1997 AQMP long-term measures, and revise the schedule for adoption and implementation of specific control measures, while leaving the AQMP's emissions inventories, carrying capacity, ozone attainment demonstration, future emission baseline inventories, and 2010 emission budgets unchanged. The proposed 1999 amendment is expected to provide greater emission reductions in the near-term than would occur under the 1997 AQMP. The proposed 1999 amendment also represents early adoption of the measures that would otherwise be contained in the next three-year update of the AQMP.

BACKGROUND

The California Legislature adopted the Lewis Air Quality Act in 1976, creating the SCAQMD from a voluntary association of air pollution control districts in Los Angeles, Orange, Riverside, and San Bernardino counties. The new agency was charged with developing uniform plans and programs for the South Coast Air Basin (Basin) to attain federal air quality standards by the dates specified in federal law. The agency was also required to attain state ambient air quality standards by the earliest practicable date through the use of reasonably available control measures.

The Lewis Air Quality Act (now known as the Lewis-Presley Air Quality Management Act) requires the SCAQMD to prepare an air quality management plan (AQMP) consistent with federal planning requirements. In 1977, amendments to the federal Clean Air Act (CAA) included requirements for submitting State Implementation Plans (SIPs) for nonattainment areas that fail to meet all federal ambient air quality standards. SIPs include all control measures and compliance schedules that are necessary to comply with CAA mandates by designated timetables. The first AQMP was prepared and approved by the SCAQMD in 1979. The AQMP was then revised in 1982 to reflect better data and improved modeling tools. In 1987, a federal court ordered the U.S. EPA to disapprove the 1982 AQMP because it did not demonstrate attainment of all national ambient air quality standards (NAAQS) by 1987 as required by the CAA. This, in part, led to the preparation of the 1989 AQMP. The 1989 AQMP was adopted on March 17, 1989. The 1989 AQMP was specifically designed to attain all NAAQSs. Its preparation, however, began prior to the adoption of the California Clean Air Act

(CCAA) and, therefore, did not fully address specific state requirements outlined therein. The 1991 revision to the AQMP, developed to comply with the CCAA, was adopted by the SCAQMD Governing Board at its July 1991 public hearing. The 1991 AQMP was amended in 1992 to add a control measure containing emission-trading provisions. Portions of this control measure were subsequently adopted as Regulation XX – Regional Clean Air Incentives Market (RECLAIM).

To comply with the three-year update requirement in the CCAA, as well as Federal CAA requirements, the SCAQMD prepared the 1994 AQMP. The SCAQMD Governing Board adopted the 1994 AQMP at its September 1994 public hearing. The 1994 AQMP was incorporated by the California Air Resources Board (CARB) into the California SIP, which was adopted in November 1994. The South Coast Air Basin portion of the California SIP was fully approved by the U.S. EPA in September 1996.

The SCAQMD prepared the 1997 AQMP to comply with the CCAA three-year update requirement. Like the 1994 AQMP, the 1997 AQMP is designed to comply with requirements specified in the CCAA and the federal CAA. The 1997 AQMP contained a number of changes to the control strategies compared to the 1994 AQMP. These changes included: less reliance on transportation control measures (TCMs) and long-term control measures that rely on future technologies as allowed under §182(e)(5) of the CAA; and removal of otherwise infeasible control measures, including indirect source measures.

Because the 1997 AQMP is a project as defined by the California Environmental Quality Act (CEQA), a program environmental impact report (EIR) was prepared. The program EIR for the 1997 AQMP (SCH #96011062) included an analysis of potential impacts to the following environmental topics: air quality, water resources, hazards, solid/hazardous wastes, and energy. A summary of the potential environmental impacts and mitigation measures identified for the 1997 AQMP is included in Table A-1 in Appendix A. The 1997 AQMP EIR also included, and compared the relative merits of a range of reasonable project alternatives as required by CEQA. The reader is referred to Appendix A for summary descriptions of each of the project alternatives. The 1997 AQMP EIR was circulated for a public review and comment, which ended on September 24, 1996. The 1997 AQMP and the Final EIR were presented to and adopted by the SCAQMD Governing Board at the November 15, 1996 public hearing. Since November 1996, the SCAQMD has adopted 14 of the stationary and mobile source volatile organic compounds (VOC) and nitrogen oxides (NO_x) control measures contained in the 1997 AQMP that the SCAQMD was charged with implementing.

In January 1998, CARB approved the 1997 AQMP as meeting the CCAA requirement to prepare triennial plan updates. As part of its action, CARB identified several existing rules that it believes could be strengthened in order to meet the CCAA's definition of "all feasible measures." The SCAQMD is in the process of evaluating the existing rules to determine if further emission reductions could be achieved. To date, the SCAQMD

has amended one existing rule in question that will provide a small amount of reductions.

On January 12, 1999, the U.S. EPA proposed partial approval and a partial disapproval of the ozone portion of the 1997 AQMP as a SIP revision to the 1994 California Ozone SIP (64FR 1770). According to the U.S. EPA, the proposed disapproval of the control measures provided in the 1997 AQMP is based on four reasons: 1) the SCAQMD is behind in adoption of several control measures; 2) the control measures are an impermissible relaxation of the SIP; 3) the AQMP includes unlawful assignments of control measures to U.S. EPA; and 4) the 1997 Ozone Plan portion of the AQMP violates the intent of the CAA §182(e)(5). To date, U.S. EPA has not taken final action on the 1997 Ozone SIP Revision. SCAQMD has provided comments to U.S. EPA as to why the 1997 complies with federal law and should be approved.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA, Public Resources Code §21000 et seq., requires that the potential environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid identified significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD prepared a program EIR to address the potential adverse environmental impacts associated with the 1997 AQMP. A program EIR is typically prepared in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, including adoptions of broad policy programs, as opposed to EIRs prepared for specific types of projects (e.g., land use projects) (CEQA Guidelines §15168). The EIR for the 1997 AQMP was a program EIR because it examined potential adverse environmental impacts from control measures that are considered to be part of an ongoing regulatory program and would ultimately be promulgated as rules or regulations.

Type of CEQA Document

When an EIR has been certified for a project, no subsequent EIR shall be adopted unless the lead agency determines on the basis of substantial evidence in light of the whole record one or more of the following: 1) substantial changes are proposed to the project that involve new significant adverse effects or a substantial increase in the severity of previously identified impacts; 2) substantial changes occur with respect to the circumstances under which the project is undertaken; and 3) new information of substantial importance, which was not known and could not have been known with the exercise of due diligence at the time the previous EIR was certified [CEQA Guidelines §15162(a)].

The SCAQMD has evaluated the proposed 1999 amendments to determine if any one of the above circumstances occur. Analysis of the proposed 1999 amendments indicates

that none of the three circumstances identified above will occur. The environmental analysis concluded that no new significant adverse environmental impacts would be generated and no previously identified impacts would be made substantially worse. Further, it has been determined that the project does not meet the definition of a project of statewide, regional, or areawide significance as defined by CEQA Guidelines §15206. On the basis of substantial evidence in light of the whole record, the SCAQMD has determined that the appropriate CEQA document for the proposed 1999 amendments is a supplemental EIR (CEQA Guidelines §15163) to the Final EIR prepared for the 1997 AQMP as certified at the November 1996 Governing Board Hearing.

One way of avoiding or substantially lessening significant adverse impacts from a proposed project is to describe and compare the relative merits of a range of reasonable alternatives (CEQA Guidelines §15126.6). Since the environmental analysis of the proposed 1999 amendments concluded that the project would not have any significant or potentially significant adverse effects on the environment, identification and comparison of the relative merits of project alternatives is not required. A range of reasonable alternatives was previously analyzed in the Final EIR for the 1997 AQMP. A summary description of these alternatives is given in Appendix A.

A supplemental EIR (SEIR) need only contain the information necessary to make the previous document adequate for the project as revised [CEQA Guidelines 15163(b)], and may be circulated by itself without recirculating the previous draft or final EIR [CEQA Guidelines §15163(d)]. This draft SEIR focuses solely on the proposed 1999 amendments. Those portions of the 1997 AQMP not affected by the proposed 1999 amendments are not analyzed in this SEIR. Existing components of the 1997 AQMP not modified by the proposed 1999 amendments were adequately analyzed in the previously prepared and certified November 1996 Final EIR and no further analysis is necessary. To obtain a copy of the Final EIR for the 1997 AQMP (SCH #96011062) the public can contact the SCAQMD's Public Information Center at (909) 396-3600.

EXECUTIVE SUMMARY

CEQA Guidelines §15123 requires an EIR to include a brief summary of the proposed actions and their consequences. In addition, areas of controversy including issues raised by the public must also be included in the executive summary. The areas of controversy related to the 1997 AQMP are primarily related to 31 control measures from the approved 1994 SIP which were deleted or delayed in the 1997 AQMP. The areas of controversy related to the non-implementation of a federally approved SIP that are currently being litigated are not relevant to the Final 1997 AQMP EIR or this Draft SEIR because the lawsuit did not raise questions regarding the adequacy of the CEQA document.

The following subsections provide brief summaries of the contents of each chapter in this document, including the impacts and mitigation chapter, Chapter 4.

Executive Summary: Chapter 2 – Project Description

The Amendment to the 1997 AQMP is intended to revise the adoption and implementation of the remaining volatile organic compounds (VOC) and nitrogen oxides (NO_x) stationary source control measures in the 1997 AQMP that the SCAQMD is responsible for. This amendment does not revise any of the control measures that the state or federal agencies will be implementing. In addition, the ozone attainment demonstration, future emission baseline inventories, carrying capacity and 2010 emission budgets remain the same as those provided in the 1997 AQMP. This amendment revises only the ozone portion of the 1997 AQMP (known as the 1997 Ozone SIP Revision for the South Coast Air Basin).

This amendment makes the following changes to the 1997 AQMP control strategy:

- Revises the 1997 AQMP control strategy to reflect adoption of 14 VOC and NO_x stationary and mobile source control measures that the SCAQMD is responsible for implementing.

- Amendment to one existing VOC rule that CARB found that it does not meet the CCAA requirement of all feasible measures.

- The addition of eight new short-term stationary source control measures to reduce VOC emissions. Four of these new stationary source control measures represent implementation of portions of the long-term stationary source control measures such that the reliance on the long-term controls is reduced.

- Changes the adoption/implementation schedule for 13 short-term stationary source control measures provided in the 1997 AQMP.

- The remaining 1997 AQMP control measures would remain the same as provided in the 1997 AQMP.

- Revises the VOC emission budgets for some of the interim milestone years.

Executive Summary: Chapter 3 – Existing Settings

Air Quality

Over the last decade and a half, there has been significant improvement in air quality in the SCAQMD's jurisdiction. Nevertheless, several air quality standards are still exceeded frequently and by a wide margin. Of the National Ambient Air Quality

Standards (NAAQS) established for six criteria pollutants (ozone, lead, sulfur dioxide, nitrogen dioxide, carbon monoxide, and PM10), the area within the SCAQMD's jurisdiction is only in attainment with the sulfur dioxide and nitrogen dioxide standards. Chapter 3 provides a brief description of the existing air quality setting for each criteria pollutant, as well as the human health effects associated with each pollutant.

Hazards

Potential hazard impacts may be associated with the production, use, storage, and transport of hazardous materials. For the purposes of this document, the term hazardous material includes hazardous wastes. Hazardous materials may be found at industrial production and processing facilities. Examples of hazardous materials used on a consumable basis include petroleum, solvents, and coatings. Currently, hazardous materials are transported throughout the air district in great quantities via all modes of transportation including rail, highway, water, air and pipeline.

Hazard concerns are also related to the risks of explosions, the release of hazardous substances, or exposure to air toxics. State law requires detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of to prevent or mitigate injury to health or the environment in the event that such materials accidentally released. Federal laws, such as the Emergency Planning and Community-Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act or SARA) impose similar requirements.

Los Angeles, Riverside, San Bernardino and Orange counties had 1,527 reported incidents in 1997, 640 of which were petroleum spills.

Water Resources

The State Water Resources Control Board (SWRCB) and the nine regional water quality control boards (RWQCB) are responsible for protecting surface and groundwater supplies in California, regulating waste disposal, and requiring cleanup of hazardous conditions (California Water §§13000 - 13999.16). In particular, the SWRCB establishes water-related policies and approves water quality control plans, which are implemented and enforced by the RWQCBs. Five RWQCBs have jurisdiction over areas within the boundaries of the district. These agencies also regulate discharges to state waters through federal National Pollution Discharge Elimination System (NPDES) permits. Discharges to publicly owned treatment works (POTW) are regulated through federal pre-treatment requirements enforced by the POTWs.

Total water demand within the district was approximately 4.22 million-acre feet (MAF) or about 1.4 trillion gallons in fiscal year 1995[1] (July 1994 through June 1995). About two-thirds of that demand occurred in the service area of the Metropolitan Water District

[1] One acre foot (AF) is equivalent to 325,800 gallons.

of Southern California (MWD). The MWD's service area includes southern Los Angeles County, all of Orange County, the western portion of Riverside County, and the Chino Basin in southwestern San Bernardino County. The MWD supplied 1.57 MAF and the Los Angeles Department of Water and Power, the other major water supplier in Southern California, supplied 0.55 MAF in the fiscal year 1995 (Rodrigo, 1996). The remaining 2.1 MAF were drawn from local water sources by local water districts within the MWD service area. About 89 percent of water consumed in the MWD region goes to urban uses with the rest going to agriculture (Rodrigo, 1996).

Energy

There are a variety of commercial, residential, and industrial end-users of electricity in the region. Electricity is transmitted to end-users through an extensive electricity distribution system. Electricity distribution is provided for the Southern California planning area by Southern California Edison (SCE), the Los Angeles Department of Water and Power LADWP and the municipal utilities of Burbank, Glendale, and Pasadena (BGP). The LADWP and BGP service areas are located entirely within the boundaries of the SCAQMD, while SCE's territory extends above the northern borders of Los Angeles County and San Bernardino County to include Ventura, Inyo, Mono and portions of Kings and Kern counties.

Natural gas is a fossil fuel widely used by stationary sources in the district. It is consumed by end-users in the residential, commercial, and industrial sectors. Its use is also increasing in the transportation sector.

Imports of petroleum products to California from out-of-state represent about six percent of total fuel demand. Domestic suppliers have been the primary source of the imports. Petroleum product export trends show that California is an important supplier of products to the neighboring states of Nevada and Arizona. Recent export volumes represent about 20 percent of California demand, or 100 million barrels per year of products.

Solid/Hazardous Waste

Solid wastes consist of residential wastes (trash and garbage produced by households), construction wastes, commercial and industrial wastes, home appliances and abandoned vehicles, and sludge residues (waste remaining at the end of the sewage treatment process). A total of 32 Class III active landfills and two transformation facilities are located within the district with a total disposal capacity of 111,198 tons per day. Los Angeles County has 14 active landfills with a permitted capacity of over 58,000 tons per day. San Bernardino County has nine public and private landfills within the district's boundaries with a combined permitted capacity of 11,783 tons per day. Riverside County has 12 active sanitary landfills with a total capacity of 14,707 tons per day. Each of these landfills is located within the unincorporated area of the county and is classified

as Class III. Orange County currently has four active Class III landfills with a permitted capacity of over 25,000 tons per day.

Executive Summary: Chapter 4 – Environmental Impacts and Mitigation

AIR QUALITY

Direct Air Quality Impacts

There is no change in anticipated NO_x emission reductions between both the existing 1997 AQMP and the proposed 1999 amendments. For VOC emission reductions, the proposed 1999 amendments are expected to achieve greater emission reductions in the near term compared to the existing 1997 AQMP.

Construction Emissions

The construction-related activities from those facilities installing add-on controls (thermal oxidizers) for compliance with the proposed 1999 amendments result in no significant adverse air quality impacts.

Secondary Impacts from Increased Electricity Demand

No significant adverse impacts to air quality are expected from control measure CTS-09 that increases electricity demand to operate various components of add-on control equipment.

Secondary Impacts from Coating Operations

Thermal oxidizers destroy VOC emissions, but the process produces secondary criteria pollutants, such as CO, NO_X, VOC, SO_X, and PM10. Total criteria pollutant emissions generated by coating/solvent operations anticipated to install thermal oxidizers would not exceed the SCAQMD's significance thresholds.

Secondary Impacts from Fugitive VOC Sources

It is anticipated that facilities, affected by control measure FUG-05, will reduce emissions through enhanced inspection and maintenance, as well as retrofitting valves, flanges and seals. Because this is considered part of the facility's regular maintenance program, retrofitting and enhanced inspection and maintenance activities will not result in significant adverse air quality impacts.

Toxic Air Contaminants

Though control measures FUG-05 and CTS-09 do not dictate any particular product formulation, implementation of the control measures may result in the use of coatings

with toxic constituents. Since there are many different product manufacturers and coating formulations, as well as many different coating applications, the specific chemical composition of reformulated coating products is not known.

There is no substantive evidence that shows the use of reformulated coatings would result in significant adverse toxic air contaminant impacts. Current coating formulations contain materials that are as toxic or more toxic than formulations expected to be used to comply with the proposed amendments. Thus, the possible increased use of toxics in reformulated cleaners will generally be balanced by a concurrent decrease in the use of toxic materials in currently used cleaners, and toxic air contaminant impacts would not be expected to change significantly from existing conditions.

Odors

No significant additional odor impacts are expected to result from the use of acetone or other solvents in reformulating coatings.

HAZARDS

The potential hazard impacts of the amended AQMP are associated with the use of flammable, explosive, or otherwise hazardous materials in reformulated coatings. The analysis in Chapter 4 shows that the potential hazard impacts resulting from adopting and implementing the proposed project are not expected to be significant. Coating operations are typically performed in industrial settings that already store and use hazardous materials, including currently used coating formulations. Thus, the increased usage of acetone and other hazardous materials as a result of implementing the project will generally be balanced by reduced usage of other equally or more hazardous materials. Additionally, aqueous coating materials typically contain less or non-hazardous materials compared to conventional coating products, a net benefit. Further, emergency contingency plans that are already in place are expected to minimize potential hazard impacts posed by any increased use of acetone in future compliant coating materials. Businesses are required to report increases in the storage of flammable and otherwise hazardous materials to local fire departments to ensure that adequate conditions are in place to protect against hazard impacts. OSHA regulations coupled with standard operating procedures, including safe handling practices, minimize worker exposure to hazardous material during coating operations.

WATER RESOURCES

Water Demand

Water demand impacts associated with the manufacture and clean-up of waterborne coating and solvent formulations are anticipated to create a negligible incremental water demand impact and will not exceed the SCAQMD's significant threshold of 5,000,000 gallons per day. It is within the capacity of the local water purveyors to supply the small

incremental increase in water demand associated with control measures CTS-09 and FUG-05. Therefore, no significant water demand impacts are expected as the result of implementing the proposed 1999 amendments.

Water Quality

Increased usage of low VOC waterborne technologies by affected facilities to comply with the emission reduction requirements of control measures CTS-09 and FUG-05 has the potential to generate groundwater impacts. Groundwater impacts could occur as a result of waste material generated from the use of low-VOC waterborne formulations being illegally dumped on the ground and percolating to water-bearing formations. Similarly, surface water impacts could occur from waste material generated from the use of low-VOC waterborne formulations being illegally dumped into storm drains that flow to interconnected bodies of water. There is substantial, however, evidence that improper disposal of low VOC coatings will not occur.

Water quality impacts to Publicly Owned Treatment Works (POTWs) could occur as a result of wastewater material generated from the use of low-VOC waterborne formulations. The potential increase in wastewater volume generated by the proposed 1999 amendments is considered to be well within the existing and projected capacity of POTWs in the district. Hence, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing control measures CTS-09 and FUG-05 are not considered significant.

ENERGY

Construction Phase

The projected energy impacts from diesel and gasoline fuel consumed in construction equipment portable equipment and by construction workers' vehicles traveling to and from construction sites are determined to be not significant.

Operational Phase

Any operational natural gas impacts associated with implementing control measure CTS-09 are attributable to fuel consumed in thermal oxidizers used by affected facilities to reduce VOC emissions. Because the natural gas impact from the implementation of control measure CTS-09 is a negligible percentage of the remaining annual capacity, the natural gas impact on the supply is not significant.

The equipment and vehicles needed for construction- and operational-related activities associated with the implementation of control measure CTS-09 is necessary and will not use energy in a wasteful manner. There will be no substantial depletion of energy resources nor will significant amounts of fuel be needed when compared to existing supplies. Furthermore, if additional fuel is needed to generate electricity for electric fans

or motors used in conjunction with thermal oxidizers at affected facilities, it would not be a wasteful use of energy nor substantially deplete existing energy resources. Thus, there are no significant adverse energy/mineral resources impacts associated with the implementation of control measure CTS-09.

SOLID/HAZARDOUS WASTE

Even if some low-VOC coating formulations are landfilled due to freeze-thaw, shelf life, or pot-life problems, the total amount of solid waste material deposited in district landfills will not create a significant solid waste impact.

According to the resin manufacturers and coating formulators, solidified coatings would not be considered a hazardous waste. Therefore, for this solid waste analysis, the SCAQMD assumed that all the landfilled material would be considered non-hazardous waste.

Table 1-1 presents a summary of the potential impacts and significance determinations associated with the proposed project.

TABLE 1-1

Summary of Potential Environmental Impacts from the
1999 Amendment to the 1997 Ozone SIP Revision

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	SIGNIFICANCE	CUMULATIVE IMPACTS
Air Quality	Modification to adoption and implementation dates of control measures	NS	NS
	Construction-related emissions from installation of add-on control equipment	NS	NS
	Secondary emissions from add-on control equipment	NS	NS
	Secondary emissions from increased electricity demand	NS	NS
	Emissions of toxic air contaminants from reformulated coatings	NS	NS
	Odors associated with reformulated coatings	NS	NS

TABLE 1-1 (CONCLUDED)

Summary of Potential Environmental Impacts from the
1999 Amendment to the 1997 Ozone SIP Revision

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	SIGNIFICANCE	CUMULATIVE IMPACTS
Hazards	Risk of upset associated with hazardous materials	NS	NS
Water Resources	Water quality impacts from the disposal and clean-up of reformulated coatings	NS	NS
	Water demand associated with manufacture and cleanup of reformulated coatings	NS	NS
Energy	Increased use of electricity and natural gas for add-on control equipment	NS	NS
Solid/Hazardous Waste	Generation of solid/hazardous waste due to disposal of unusable reformulated coatings	NS	NS

CHAPTER 2

PROJECT DESCRIPTION

Introduction
Project Location
Summary of the 1997 AQMP
Project Description
Statement of Objectives
Intended Uses of this Document

INTRODUCTION

The 1997 AQMP provides a strategy for attaining federal air quality standards and expeditious progress toward attainment of state air quality standards. The AQMP strategy currently being implemented includes measures that target stationary and mobile sources. That strategy was developed based upon scientific and technical data, legal mandates, and input from public agencies and others. The SCAQMD solicited input on the AQMP from the regulated community, environmental and public interest groups, and the public in general. Input was gathered from comments, meetings and general contact with these groups as well as through a series of public workshops on the 1997 AQMP and public review of the AQMP and its associated EIR (SCH #96011062).

On January 12, 1999, the U.S. EPA proposed partial disapproval of the ozone portion of the 1997 AQMP as a SIP revision to the 1994 California Ozone SIP (64FR 1770). The proposed disapproval of the control measures provided in the 1997 AQMP is based on four reasons: 1) the SCAQMD is behind in adoption of several control measures; 2) the control measures are an impermissible relaxation of the SIP; 3) the AQMP includes unlawful assignments of control measures to U.S. EPA; and 4) the 1997 Ozone Plan portion of the AQMP violates the intent of the CAA §185(e)(5). To date, U.S. EPA has not taken final action on the 1997 Ozone SIP Revision. SCAQMD has provided subsequent comment to U.S. EPA as to why the 1997 complies with federal law and should be approved.

The SCAQMD, therefore, is proposing a 1999 Amendment to the 1997 Ozone SIP Revision to address EPA's concerns. The 1999 Amendments would add four new stationary source short- and intermediate-term control measures, four short-term control measures that implement portions of the 1997 AQMP long-term measures, and modify the schedule for the adoption and implementation of specific control measures, while leaving the 1997 AQMP's emissions inventories and attainment demonstration unchanged. This action includes early adoption of the measures that would otherwise be contained in the next three-year update of the AQMP. SCAQMD will continue to evaluate all control measures and attainment demonstration dates contained in the 1997 AQMP as part of the next comprehensive AQMP update.

In addition to describing the project location, this chapter describes the proposed project which includes current air pollution control strategies and describes the proposed approach for the Amendment to the 1997 AQMP to attain and maintain the ozone national ambient air quality standard.

PROJECT LOCATION

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Orange County and the non-desert

portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin. The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange county and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Los Angeles county portion of MDAB (known as North county or Antelope Valley) is bounded by the San Gabriel Mountains to the south and west, the Los Angeles/Kern county border to the north, and the Los Angeles/San Bernardino county border to the east. The Riverside county portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of the Riverside county and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 2-1).

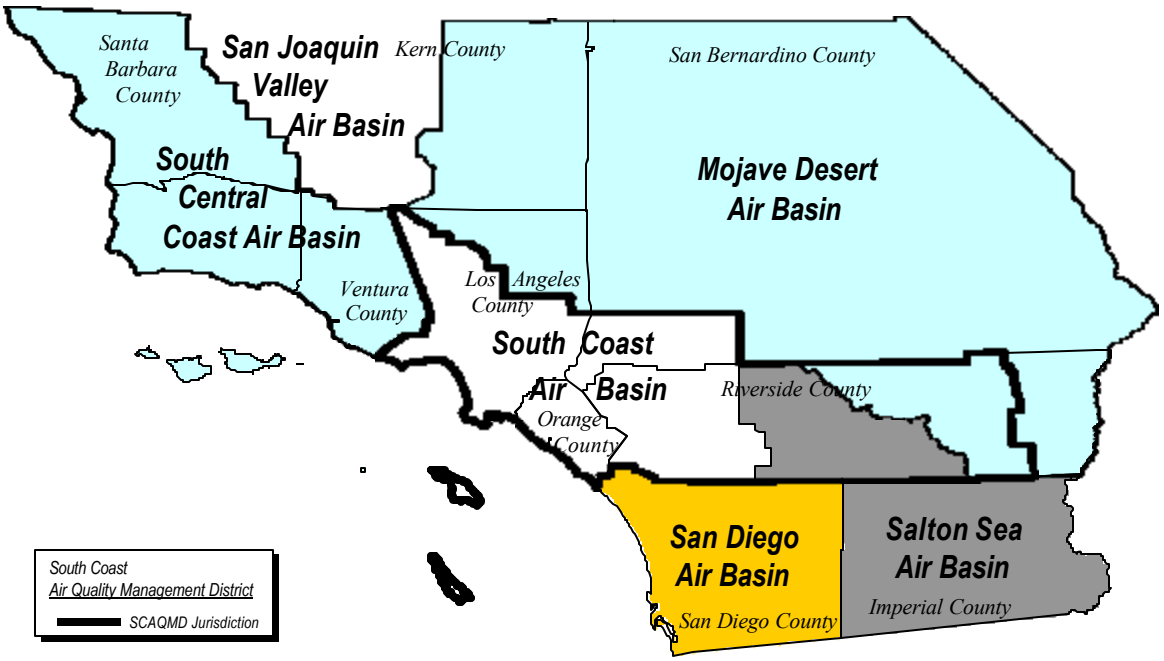

FIGURE 2-1

Boundaries of the South Coast Air Quality Management District

SUMMARY OF THE 1997 AQMP

The 1997 AQMP contains two tiers of emission reduction measures, which are based on availability and readiness of control technology, short-and intermediate-term, and long-term measures. Short- and intermediate-term measures rely on available technologies and are anticipated to be adopted by 2001. Long-term control measures rely on further development and refinement of known low and zero-emission control technologies, as well as development of new advanced technologies. Long-term measures would be implemented between 2005 and 2010.

Short- and Intermediate-term Control Measures

Short- and intermediate-term measures rely on available control technologies or technologies that will reasonably be expected to be available in the near future: Short- and intermediate-term control measures are generally classified as either: 1) stationary sources, either point sources (permitted) or area sources (unpermitted) or 2) mobile sources, which include on-road motor vehicles (e.g., passenger cars, light-duty trucks, medium-duty trucks, heavy-duty trucks, and motorcycles) and off-road mobile sources (e.g., aircraft, trains, marine vessels, farm and construction equipment, etc.).

Stationary Source Control Measures

The control methods for stationary sources identified in Table 2-1 rely on a variety of control technologies and management practices. Control technologies vary according to the source type and pollutant being controlled and generally include a process or physical modification such as product reformulation, installation of air pollution control equipment, alternative fuels, etc. Good management practices include administrative changes such as improved housekeeping techniques, inspection and maintenance programs, etc. For a comprehensive description of the typical types of control technologies available to achieve the projected emissions reductions for stationary sources, the reader is referred to Chapter 2 of the Final EIR for the 1997 AQMP (SCH #96011062).

TABLE 2-1

1997 AQMP Stationary Source Control Methods

SOURCE CATEGORY	CONTROL METHOD
Coatings and Solvents (CTS)	• Market Incentives
	• Reformulation
	• Higher Transfer Efficiency
	• Process Improvements
	• Add-On Controls
	• Improved Housekeeping Practices

TABLE 2-1 (CONCLUDED)

1997 AQMP Stationary Source Control Methods

SOURCE CATEGORY	CONTROL METHOD
Coatings and Solvents (CTS)	• Alternative Coating and Solvent Application Methods
	• Alternative Pesticide Formulation Application and Methods
Petroleum Operations, Refueling, and Fugitive VOC Emissions (FUG)	• Market Incentives
	• Process Modifications
	• Add-On Controls Systems
	• Improved Vapor Recovery Systems
	• Enhanced Inspection and Maintenance
Combustion Sources (CMB)	• Market Incentives
	• Add-On Controls
	• Process Improvement
	• Improved Energy Efficiency
Fugitive Dust and Miscellaneous Sources (MSC, WST, FSS, PRC)	• Road Dust Suppression
	• Watering of Disturbed Surface Areas
	• Windbreaks
	• Chemical Stabilization of Unpaved Areas
	• Track-Out Prevention
	• Paving at Areas Adjacent to Roadways
	• Street Cleaning
	• Bedliners in and Covering of Fill Import and Export Vehicles
	• Revegetation of Disturbed Surface Areas
	• Reduced Vehicular Speeds on Unpaved Roads
	• Aggregate Covering of Unpaved Roads
	• Soil Erosion Control for Agricultural Activities
	• Add-On Controls
	• Public Awareness Programs
	• Post-Event Street Clean-Up
Compliance Flexibility Programs (FLX)	• Compliance Flexibility to Lower Compliance Costs
	• Promotion of Early Reductions
	• Incentivize Clean Technologies
	• Investment in Clean Technologies

For inventory purposes, area sources are grouped into over 130 categories. Stationary source controls are proposed to reduce emissions from both point (permitted) sources and area (generally small and non-permitted) sources. There are approximately 25,000 facilities with permitted stationary equipment within the Basin.

Mobile Source Control Measures

CARB and U.S. EPA have primary authority to control mobile source emissions through the adoption of emission standards and other related requirements, whereas the SCAQMD has limited authority to regulate mobile source emissions. Table 2-2 identifies the mobile source control methods considered in the 1997 AQMP.

TABLE 2-2

1997 AQMP Mobile Source Control Methods

SOURCE CATEGORY	CONTROL METHOD
Advanced Transportation Technologies (ATT)	• Telecommunications
	• Smart Shuttle Transit
	• Zero Emissions Vehicles/Infrastructure
	• Alternative Fuel Vehicles/Infrastructure
	• Intelligent Vehicle Highway System (IVHS)
Transportation Improvements (M)	• Transportation Improvements
	– Capital-Based Actions and Their Pricing Alternatives
	– HOV Lanes
	– Transit Improvements
	– Traffic Flow Improvements
	– Park and Ride and Intermodal Facilities
	– Urban Freeway, Bicycle, and Pedestrian Facilities
	– Non-Capital-Based Actions and Information Services
	– Rideshare Matching
	– Congestion Management Program-Based TDM
	– Telecommunication Facilities/Satellite Work Centers
	– TDM Demonstration Projects/Programs
	– Transit Pass Centers
Further Study Strategy (FSS)	• REACH Task Force Recommendations

Progress in Implementing the 1997 AQMP

Progress in implementing the 1997 AQMP can be measured by the number of control measures that have been adopted as rules and the resulting tons of pollutants targeted for

reduction. Table 2-3 lists the 14 stationary and mobile source control measures from the 1997 AQMP that were adopted by the SCAQMD from October 1996 through September 30, 1999. Table 2-3 includes one existing rule that was amended to address CARB's action on the 1997 AQMP.

TABLE 2-3

SCAQMD VOC and NO_x Control Measures Adopted
From October 1996 through September 1999

CONTROL MEASURE	RULE	POLLUTANT	TITLE
CTS-02H	1107	VOC	Emission Reductions from Metal Parts and Products
CTS –02M	1145	VOC	Emission Reductions from Plastic, Rubber and Glass Coatings
CTS-02N	1122	VOC	Emission Reductions from Solvent Degreasers
CTS-03	*	VOC	Consumer Product Education Labeling Program
CTS-04	*	VOC	Public Awareness/Education Programs – Area Sources
CTS-07	1113	VOC	Further Emission Reductions from Architectural Coatings
CMB-02B	1146.2	NO_x	Emission Reductions from Small Boilers and Process Heaters
CMB-03	2506	NO_x	Area Source Credit Programs
CMB-04	2506	NO_x	Area Source Credit for Energy Conservation/ Efficiency
CMB-07	1118	All	Emission Reductions from Petroleum Refinery Flares
PRC-03	1138	VOC	Emission Reductions from Restaurant Operations
FLX-02	2501	All	Air Quality Investment Program
MON-10	1613	All	Emission Reduction Credit for Truck Stop Electrification
MSC-02	*	All	In-Use Compliance Program for Air Pollution Control Equipment
**	1104	VOC	Wood Flat Stock Coating Operations

* - CTS-03, CTS-04, and MSC-02 are implemented through the SCAQMD's Public Outreach Programs. There were no emission reductions assigned to these measures in the 1997 AQMP.
** - Existing rule not contained in the 1997 AQMP as a control measure.

PROJECT DESCRIPTION

The Amendment to the 1997 AQMP is intended to revise the adoption and implementation of the remaining VOC and NO_x stationary source control measures in the 1997 AQMP that the SCAQMD is responsible for. This amendment does not revise

any of the control measures that the state or federal agencies will be implementing. In addition, the ozone attainment demonstration, future emission baseline inventories, carrying capacity and 2010 emission budgets remain the same as those provided in the 1997 AQMP.

Similar to prior AQMPs, the 1999 amendments reflect the two tiers of emission reduction measures (short/intermediate and long-term measures), based on availability and readiness of technology. Short- and intermediate-term measures rely on available technologies and management practices that can be adopted between now and 2002. These measures primarily rely on the traditional command and control approach facilitated by market incentive programs to implement technological solutions and control methods. These short- and intermediate-term measures are designed to satisfy the federal Clean Air Act requirement of reasonably available control technologies (RACT), and the CCAA requirements of best available retrofit control technologies (BARCT).

To ultimately achieve ambient air quality standards, further development and refinement of known low and zero-emission control technologies in addition to technological breakthroughs will be necessary. Long-term measures rely on the advancement of technologies and control methods that can reasonably be expected to occur between 2000 and 2010.

This amendment makes the following changes to the 1997 AQMP control strategy:

- Revises the 1997 AQMP control strategy to reflect adoption of 14 VOC and NO_x stationary and mobile source control measures that the SCAQMD is responsible for implementing.

- Amendment to one existing VOC rule that CARB found that it does not meet the CCAA requirement for all feasible measures.

- The addition of eight new short-term stationary source control measures to reduce volatile organic compounds (VOC) emissions. Four of these new stationary source control measures represent implementation of portions of the long-term stationary source control measures such that the reliance on the long-term controls is reduced.

- Changes the adoption/implementation schedule for 13 short-term stationary source control measures provided in the 1997 AQMP.

- The remaining 1997 AQMP control measures would remain the same as provided in the 1997 AQMP.

- Revises the VOC emission budgets for some of the interim milestone years.

New Short- and Intermediate-Term Measures

This amendment to the 1997 AQMP adds four new short-term stationary source control measures and four short-term measures implementing portions of the 1997 AQMP to the AQMP control strategy. Table 2-4 provides a list of the new control measures. Detailed descriptions of the control measures are found in the proposed amendments to the 1997 AQMP. Please refer to Chapter 4 for the anticipated VOC and NO_x emission reductions.

TABLE 2-4

New Short- and Intermediate-Term Stationary Source Control Measures

CONTROL MEASURE	CONTROL MEASURE DESCRIPTION	POLLUTANT
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources	VOC
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources	VOC
FUG-06	Control of Methanol Emissions from Hydrogen Plant Process Vents	VOC
RFL-02(P2)	Further Emission Reductions form Gasoline Dispensing Facilities	VOC

CTS-09: This measure is designed to seek additional VOC emission reduction opportunity from large coating and solvent operations (e.g., facilities emitting more than 25 tons per year). Control options to be considered include add-on controls, use of super-clean coating materials, or process changes. Compliance flexibility at the facility level would also be examined. This measure will implement a portion of CM#97ADV[*]-CTS provided in the 1997 AQMP.

FUG-05: This measure intends to further reduce emissions from large fugitive emission sources, such as refineries, oil and gas production facilities, terminals, chemical plants, and manufacturing facilities. Reductions could be achieved through the implementation of facility-specific and AQMD approved compliance plan. As such, compliance flexibility opportunities could be maximized. This measure will implement a portion of CM#97ADV-FUG provided in the 1997 AQMP.

FUG-06: During recent emission audits, AQMD staff found that the methane reformer catalyst at some refinery hydrogen plants may generate a potentially significant amount of VOC emissions, primarily methanol. Although the recently developed Refinery

[*] The three-letter designation represents the source category: ADV=Advanced Technology Measures; CMB=Combustion Sources; CTS=Coatings & Solvents; MSC=Misc. Sources; PRC=Process-Related Emissions. Some measures may have a suffix designation of "(Px)" to represent additional phases of adoption and implementation and "x" represents the phase.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Maximum Achievable Control Technology (MACT) exempts hydrogen plant process vents, there may be cost-effective controls to reduce such emissions for criteria pollutant purposes. The implementation of this control measure would first involve the development of an accurate inventory. Since the 1997 AQMP baseline emissions inventory may not have included these emissions, any emission reductions achieved from this measure would not be credited towards the attainment demonstration.

RFL-02(P2): During recent compliance audits for Rule 461, it was found that many gas stations were not complying with Rule 461. As such, AQMD staff is developing amendments to Rule 461 to tighten rule requirements and improve compliance. As part of the rule amendment staff has also identified further emission reductions potential from gas stations. This measure will implement a portion of CM#97ADV-FUG provided in the 1997 AQMP.

Expedited Implementation of Long-Term Control Measures in the 1997 AQMP

This amendment to the 1997 AQMP expedites the implementation of four long-term control measures in the 1997 AQMP and thus reclassifies them as short and intermediate stationary source control measures instead of long-term. Table 2-5 provides a list of these four new control measures. Detailed descriptions of the control measures are found in the proposed amendments to the 1997 AQMP.

TABLE 2-5

Expedited Implementation of Long-Term Control Measures in the 1997 AQMP

CONTROL MEASURE	CONTROL MEASURE DESCRIPTION	POLLUTANT
CTS-02C(P2)	Further Emission Reductions from Solvent Cleaning Operations (Rule 1171)	VOC
CTS-07(P3)	Further Emission Reductions from Architectural Coatings and Cleanup Solvents (Rule 1113)	VOC
CTS-08	Further Emission Reductions from Industrial Coating and Solvent Operations	VOC
PRC-06	Further Emission Reductions from Industrial Processes	VOC

CTS-02C(P2): This measure would implement a portion of CM#97ADV-CLNG provided in the 1997 AQMP by reducing the VOC limit to below 50 g/l for many of the cleaning operations. Previously, due to the constraint of laboratory test detection limits, the standard has been set at 50 g/l. Recent refinements in test methods have identified

compliant products at a lower level. The measure will also seek emission reduction opportunities from categories currently exempt under AQMD Rule 1171.

CTS-07(P3): This measure along with two recent rule amendments in 1996 and 1999 to Rule 1113 - Architectural Coatings, will fully implement CM #99ADV-ARCH. On-going technical evaluation on coating performance and research to further develop low-VOC and/or low-reactive coating materials can provide further reduction opportunities. This measure will also seek emission reductions in cleanup solvent use that is currently exempt under Rule 1171 - Solvent Cleaning Operations.

CTS-08: This measure will implement a portion of CM#97ADV-CTS provided in the 1997 AQMP through a comprehensive review of existing Regulation XI and Regulation IV to identify further reduction potential. The review would include, but not be limited to, a comparison of VOC limits adopted by other air districts in California, survey of recent BACT determinations, etc.

PRC-06: This measure is designed to implement a portion of CM#97ADV-PRC provided in the 1997 AQMP. The source categories include, but are not limited to, polyester resin operations, manufacturing or fabrication of rubber or plastic products, or food flavoring operations. The potential control options to be evaluated include material and/or process modification, and good housekeeping measures.

1997 AQMP Short and Intermediate Stationary Source Control Measures with Revised Adoption/Implementation Schedules

As part of this amendment, 13 of the 1997 AQMP control measures will have revised adoption/implementation dates. Table 2-6 provides a list of these 13 stationary source control measures. The revised adoption/implementation dates reflect findings by the SCAQMD staff relative to the feasibility and the resources necessary to adopt and implement these measures.

CMB-06 This measure is similar to CM#97CMB-06 provided in the 1997 AQMP for new sales of water heaters. The measure will seek to reduce NOx emissions from water heaters based on recently developed burner technology. The implementation date has been revised to reflect the nature of implementing this control measure that will only affect new sales.

WST-01 This control measure considers the emissions inventory associated with livestock waste and the development and assessment of feasible control approaches. The technical work has been initiated. The next step involves the development of feasible control approaches. The adoption schedule is clarified to reflect the ammonia and VOC control portions (the PM_{10} portion was adopted in 1998). The implementation schedule is shortened to achieve full implementation of this measure two years earlier.

TABLE 2-6

1997 AQMP Short and Intermediate Stationary Source Control Measures with Revised Adoption/Implementation Dates

			ADOPTION DATE (YEAR)		IMPLEMENTATION DATE (YEAR)	
CONTROL MEASURE	CONTROL MEASURE DESCRIPTION	POLLUTANT	1997 AQMP	1999 AMEND-MENTS	1997 AQMP	1999 AMEND-MENTS
CMB-06	Emission Standards for New Commercial and Residential Water Heaters (Rule 1121)	NO_x	1999	1999	2003-2013	2003
WST-01	Emission Reductions from Livestock Waste (Rule 1419)	VOC, PM10, Ammonia	1998	2002	2004-2006	2004
WST-02	Emission Reductions from Composting	VOC, PM10, Ammonia	1998	2001	2004-2006	2004-2006
WST-03	Emission Reductions from Waste Burning (Rule 444)	VOC	1997	*	1997-2010	2002
WST-04	Emission Reductions from Disposal of Materials Containing Volatile Organic Compounds	VOC	1997	2000	1998-2001	2002
PRC-03 (P2)	Emission Reductions from Restaurant Operations – Phase II (Rule 1138)	VOC, PM10	1997+	2000	2000-2004	2001 (new) 2003 (retrofit)
FUG-03	Further Emission Reductions from Floating Roof Tanks (Rule 463)	VOC	1999	TBD	2000	TBD
FUG-04	Further Emission Reduction from Fugitive Sources (Rule 1173)	VOC	1997	2001-2003	1997	2003-2008
CTS-02-E	Further Emission Reductions from Adhesives (Rule 1168)	VOC	2000	2000	2007-2010	2007-2008
CTS-02-O	Emission Reductions from Solvent Usage (Rule 442)	VOC	2000	2000	2000-2005	2002
MSC-01	Promotion of Lighter Color Roofing and Road Materials and Tree Planting Programs	All	1999	TBD	2000	TBD
MSC-03	Promotion of Catalyst-Surface Coating Technology Programs	All	1998	TBD	2000-2004	TBD
FLX-01	Intercredit Trading Program	All Pollutants	1997	TBD	1997-1998	TBD

* - WST-03 will be implemented through the development of Memorandum of Understanding with the local fire agencies.
+ - Phase I of this measure was adopted in 1997.

WST-02 This control measure is divided into two phases. The first phase is the development of an emission inventory for composting activities. In the second phase, District staff will conduct technical assessments of the feasibility of controlling composting activities in conjunction with studies for control measure WST-01. The adoption date for this control measure has been revised to 2001, as technical studies of control effectiveness are completed.

WST-03 U.S. EPA recently released a federal wildland fire policy that would require air districts and states to develop a fire management program or revised their current fire management program to be consistent with the federal policy. U.S. EPA does not expect states to make formal SIP submittals of any regulatory actions. Instead, the U.S. EPA prefers that Memorandum of Understandings (MOUs) be established between the air districts, state, federal land managers, and fire departments to implement the fire management program.

Instead of formal rule amendments to the District Rule 444, the District will be working with the stakeholders to develop the fire management MOU. The MOU will be brought to the District Governing Board for consideration.

In addition, the ARB is considering amendments to Title 17 of the California Code to be consistent with the federal fire policy. ARB envisions that the amendments would be completed sometime in 1999. If necessary, Rule 444 may need to be amended after the state revisions. Therefore, this measure will be implemented through MOUs and/or amendments to Rule 444.

WST-04 The rule development proceedings for this control measure is currently underway. District staff technical analysis includes data collection of the emissions inventory associated with disposal of organic waste at disposal facilities and identification of feasible control methods. The adoption/implementation schedule is revised to reflect the current rulemaking schedule.

PRC-03(P2) The first phase of this control measure was adopted as part of amendments to Rule 1138. The revised adoption/implementation dates reflect phase II of the control measure, which will establish emission limits for under-fired charbroilers.

FUG-03 Based on the most recent technical assessment for this control measure, it is determined that the emissions from this activity (source) are insignificant, resulting in negligible emission reduction potential. As such, it is recommended that this measure be re-evaluated as part of the next comprehensive AQMP revision to identify other viable control strategies.

FUG-04 This measure is similar to CM#97FUG-04 provided in the 1997 AQMP. Due to potential double-counting, emission reductions associated with this measure are

included as part of CM#99FUG-05. As such, rule development for CM#99FUG-04 and CM#99FUG-05 will be combined.

CTS-02E This measure is similar to CM#97CTS-02E provided in the 1997 AQMP, except that the implementation period would be shortened (i.e., 2007 to 2008 in lieu of 2007 to 2010 in the 1997 AQMP).

CTS-02O: This measure is similar to CM#97CTS-02O provided in the 1997 AQMP, except that there would be an expedited adoption schedule of no later than 2000 with implementation by 2002. The source categories to be considered are those operations using VOC-containing materials but currently not subject to any Regulation XI rule. The proposed approach would be an evaluation of the existing Rule 442 to determine if the number of sources subject to this rule can be minimized and the existing Regulation XI rules can be more effectively applied to these sources.

MSC-01 This measures was envisioned in the 1997 AQMP to provide emission reduction credits for voluntary actions to reduce ozone by lowering the ambient temperature through the use of lighter colored roofing and paving materials. This measure is implemented in part through the U.S. EPA's Cool Communities Program. The U.S. EPA and the District has been moving forward with the promotion of the use of lighter color roofing and paving materials. Several demonstration projects are currently being conducted nationally (one with the City of Los Angeles). In addition, tree planting programs are being promoted throughout the region. The District has sponsored several studies to further quantify the benefits of these actions. As such, this Amendment proposes to revise the adoption/implementation dates for MSC-01 to dates to be determined. It is recommended that this measure be re-evaluated as part of the next comprehensive AQMP revision to identify viable implementation approaches.

MSC-03 It was envisioned in the 1997 AQMP that ozone destroying catalyst coatings could be applied on a larger regional-scale. Several field studies have been conducted to demonstrate the efficacy of the use of the ozone destroying catalyst and preliminary results do indicate reductions in ozone concentrations when the catalyst is used. There are ongoing technical research studies and demonstration projects determining the relationship between the amount of ozone destroyed and equating the ozone destroyed to an equivalent amount of VOC and/or NOx emissions reduced under various meteorological and geographic conditions. In addition, staff is reviewing the recent ARB LEV II Program that contains an element to allow for VOC credits for the catalyst surface coating in mobile source applications. If the mobile source credit approach is found to be applicable to stationary sources, staff will develop an incentives program for stationary sources. Therefore, this Amendment would revise the 1997 AQMP adoption/implementation date for this measure to dates to be determined. There were no emission reductions assigned to this measure in the 1997 AQMP.

FLX-01 The adoption/implementation dates have been revised to allow additional time to incorporate changes to the U.S. EPA Economic Incentive Program. The District remains committed to the development and implementation of this program and views it as an important part of the local attainment effort.

STATEMENT OF OBJECTIVES

CEQA Guidelines §15124(b) requires an EIR to include a statement of objectives, which describes the underlying purpose of a proposed project. The purpose of the statement of objectives is to aid the decision-makers in preparing findings or a statement of overriding considerations, necessary. The specific objectives of the Proposed 1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin are as follows:

1. Obtain U.S. EPA approval of a revised ozone SIP for the South Coast Air Basin, thus forming the basis for requesting the SCAQMD to petition the U.S. District Court to set aside its preliminary Statement of Decision on August 27, 1999 ordering the SCAQMD to implement 31 measures contained in the 1994 California Ozone SIP for the South Coast Air Basin.

2. Incorporate amendments to the 1997 AQMP that will result in greater VOC emission reductions in the near-term while still obtaining the necessary emissions reductions to attain the federal ozone ambient air quality standard at an expeditious pace. The amendments also include:

   a) Revises the 1997 AQMP control strategy to reflect adoption of 14 VOC and NO_x stationary and mobile source control measures and amendment to one existing rule that the SCAQMD is responsible for implementing.

   b) Amendment to one existing VOC rule that CARB found that does not meet the CCAA requirement of all feasible measures.

   c) The addition of eight new short-term stationary source control measures to reduce VOC emissions. Four of these new stationary source control measures represent implementation of portions of the long-term stationary source control measures such that the reliance on the long-term controls is reduced.

   d) Changes the adoption/implementation schedule for 13 short-term stationary source control measures provided in the 1997 AQMP.

   e) The remaining 1997 AQMP control measures would remain the same as provided in the 1997 AQMP.

   f) Revises the VOC emission budgets for some of the interim milestone years.

INTENDED USES OF THIS DOCUMENT

In general, a CEQA document is an information document that: informs a public agency's decision-makers and the public generally of the significant environmental effects of a project, identifies possible ways to minimize the significant effects, etc. (CEQA Guidelines §15121). A public agency's decision-makers must consider the information in a CEQA document prior to making a decision on the project.

In addition to its use as a public disclosure document as described in the preceding paragraph, CEQA Guidelines §15124 (d) requires a public agency to identify the following specific types of intended uses:

A) A list of the agencies that are expected to use the EIR in their decisionmaking;

B) A list of permits and other approvals required to implement the project; and

C) A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies…

To the extent that local public agencies, such as cities, counties public utilities, etc., are responsible for implementing control measures or portions of control measures, they could possibly rely on or tier off of this Supplemental EIR during the decisionmaking process. Similarly, public agencies approving projects at facilities complying with AQMP control measures promulgated as rules or regulations may rely on or tier off of this Supplemental EIR.

Once the SCAQMD Governing Board adopts an AQMP or AQMP amendment, no further approvals are necessary for the plan although rule amendments will be needed to implement its control strategies. The rules will have their own CEQA analysis. A CEQA document prepared for an AQMP or rule is, however, part of the administrative record for that AQMP, which is then forwarded to CARB for approval and incorporation into the SIP. If the AQMP (including the CEQA document, which is part of the AQMP's administrative record) is approved and incorporated into the SIP by CARB, the SIP is then forwarded to the U.S. EPA for final approval or disapproval. Since EPA has proposed partial disapproval of the ozone portion of the 1997 AQMP, the proposed 1999 amendments are an effort by the SCAQMD to address issues identified by the U.S. EPA.

CHAPTER 3

EXISTING SETTING

Introduction
Air Quality
Hazards
Water Resources
Energy Resources
Solid / Hazardous Waste
Consistency

INTRODUCTION

In order to determine the significance of the impacts associated with a proposed project, it is necessary to evaluate the project's impacts against the backdrop of the environment as it exists at the time the notice of preparation is published. The CEQA Guidelines defines "environment" as "the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance" (CEQA Guidelines §15360; see also Public Resources Code §21060.5). Furthermore, a CEQA document must include a description of the physical environment in the vicinity of the project, as it exists at the time the notice of preparation is published, from both a local and regional perspective (CEQA Guidelines §15125). Therefore, the "environment" or "existing setting" against which a project's impacts are compared consists of the immediate, contemporaneous physical conditions at and around the project site (Remy, et al; 1996).

The following sections set forth the existing setting for each environmental topic analyzed in this report, i.e., air quality, hazards, water resources, solid/hazardous waste, and energy. In Chapter 4, potential adverse impacts are then compared to the existing setting to determined whether the effects of the amendments to the 1997 AQMP are significant.

AIR QUALITY

It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM10), sulfur dioxide (SO_2) and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards and in the case of PM10 and SO_2, far more stringent. California has also established standards for sulfate, visibility, hydrogen sulfide and vinyl chloride. The state and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1. The 1998 air quality data from SCAQMD's monitoring stations are presented in Table 3-2.

TABLE 3-1

Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD CONCENTRATION/ AVERAGING TIME	FEDERAL PRIMARY STANDARD CONCENTRATION/ AVERAGING TIME	MOST RELEVANT EFFECTS
Ozone	0.09 ppm, 1-hr. avg. >	0.12 ppm, 1-hr avg.>	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals. (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. > 20 ppm, 1-hr avg. >	9 ppm, 8-hr avg.> 35 ppm, 1-hr avg.>	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.25 ppm, 1-hr avg. >	0.053 ppm, ann. avg.>	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr. avg. >	0.03 ppm, ann. avg.> 0.14 ppm, 24-hr avg.>	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM10)	30 $\mu g/m^3$, ann. geometric mean > 50 $\mu g/m^3$, 24-hr average>	50 $\mu g/m^3$, annual arithmetic mean > 150 $\mu g/m^3$, 24-hr avg.>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Sulfates	25 $\mu g/m^3$, 24-hr avg. >=		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 $\mu g/m^3$, 30-day avg. >=	1.5 $\mu g/m^3$, calendar quarter>	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to reduce the visual range to less than 10 miles at relative humidity less than 70%, 8-hour average (10am - 6pm)		Visibility impairment on days when relative humidity is less than 70 percent

TABLE 3-2

1998 Air Quality Data - South Coast Air Quality Management District

Source/ Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in ppm 1-hour	Max. Conc. in ppm 8-hour	Carbon Monoxide: No. Days Standard Exceeded[a)] Federal ≤9.5 ppm 8-hr.	Federal >9.0 ppm 8-hr.	State > 20 ppm 1-hr
LOS ANGELES COUNTY							
1	Central LA	364	8	6.1	0	0	0
2	NW Coast LA Co	358	7	4.5	0	0	0
3	SW Coast LA Co	363	11	9.4	0	1	0
4	S Coast LA Co	353	8	6.6	0	0	0
6	W Sn Fernan V	365	11	9.3	0	1	0
7	E Sn Fernan V	365	8	7.5	0	0	0
8	W Sn Gabrl V	348	8	6.3	0	0	0
9	E Sn Gabrl V1	359	6	3.9	0	0	0
9	E Sn Gabrl V2	--	--	--	--	--	--
10	Pomona/Wln	325	10	7.3	0	0	0
11	S Sn Gabrl V	357	17	13.4	10	11	0
12	S Cent LA Co 1	151*	18*	13.5*	8*	9*	0*
12	S Cent LA Co 2	151*	18*	13.5*	8*	9*	0*
13	Sta Clarita V	350	8	3.4	0	0	0
ORANGE COUNTY							
16	N Orange Co	365	15	6.1	0	0	0
17	Cent Orange Co	348	8	5.3	0	0	0
18	N Coast Orange	358	9	7.0	0	0	0
19	Saddleback V	319*	6*	3.1*	0*	0*	0*
RIVERSIDE COUNTY							
22	Norco/Corona	--	--	--	--	--	--
23	Metro Riv Co 1	342	5	4.6	0	0	0
23	Metro Riv Co 2	365	6	4.6	0	0	0
24	Perris Valley	--	--	--	--	--	--
25	Lake Elsinore	--	--	--	--	--	--
29	Banning/San Gor	--	--	--	--	--	--
29	Banning Airport	--	--	--	--	--	--
30	Coachella V1**	363	3	1.6	0	0	0
30	Coachella V2**	--	--	-- --	--	--	--
SAN BERNARDINO COUNTY							
32	NW SB V	--	--	-- --	--	--	--
33	SW SB V	--	--	-- --	--	--	--
34	Cent SB V 1	--	--	-- --	--	--	--
34	Cent SB V 2	360	6	4.6 0	0	0	0
35	E SB V	--	--	-- --	--	--	--
37	Cent SB Mtns	--	--	-- --	--	--	--

ABBREVIATIONS USED IN THE AREA NAMES: LA = Los Angeles, SB = San Bernardino, N = North, S = South, W = West, E = East, V = Valley, P = Pass, Cent = Central

ppm - Parts per million parts of air, by volume.

-- - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

** - Salton Sea Air Basin

a) - The federal 1-hour standard (1-hour average CO > 35 ppm) was not exceeded.

TABLE 3-2 (CONTINUED)

1998 Air Quality Data - South Coast Air Quality Management District

Source/ Receptor Area No.	Location of Air Monitoring Station	Ozone: No. Days of Data	Ozone: Max. Conc. in ppm 1-hour	Ozone: Max Conc. in ppm 8-hour	Ozone: Fourth High Conc.> . ppm 8-hour	Ozone: No. Days Standard Exceeded — Federal: 12 ppm 1-hr.	Ozone: No. Days Standard Exceeded — Federal: > .08 ppm 8-hr.	Ozone: No. Days Standard Exceeded — State: > .09 ppm 1-hour
LOS ANGELES COUNTY								
1	Central LA	362	0.15	0.11	0.096	5	9	17
2	NW Coast LA Co	365	0.13	0.08	0.070	1	0	7
3	SW Coast LA Co	363	0.09	0.07	0.064	0	0	0
4	S Coast LA Co	361	0.12	0.08	0.065	0	0	2
6	W Sn Fernan V	365	0.16	0.12	0.100	7	13	23
7	E Sn Fernan V	355	0.18	0.13	0.101	7	14	34
8	W Sn Gabrl V	349	0.17	0.14	0.118	14	17	31
9	E Sn Gabrl V1	352	0.20	0.15	0.126	19	23	43
9	E Sn Gabrl V2	352	0.22	0.17	0.143	28	38	61
10	Pomona/Wln V1	365	0.18	0.13	0.120	18	21	41
11	S Sn Gabrl V	364	0.18	0.12	0.103	10	13	31
12	S Cent LA Co 1	361	0.09	0.06	0.051	0	0	0
12	S Cent LA Co 2	160*	9.13*	0.10*	0.085*	1*	4*	7*
13	Sta Clarita V	352	0.18	0.15	0.128	16	35	38
ORANGE COUNTY								
16	N Orange Co	365	0.18	0.11	0.094	5	4	16
17	Cent Orange Co	365	0.14	0.11	0.088	2	4	10
18	N Coast Orange	361	0.12	0.08	0.076	0	0	5
19	Saddleback V	355	0.16	0.11	0.083	2	3	15
RIVERSIDE COUNTY								
22	Norco/Corona	--	--	--	--	--	--	--
23	Metro Riv Co 1	361	0.20	0.17	0.136	32	57	70
23	Metro Riv Co 2	--	--	--	--	--	--	--
24	Perris Valley	365	0.15	0.13	0.115	8	28	38
25	Lake Elsinore	358	0.17	0.14	0.129	22	44	52
29	Banning/San G P	181*	0.12*	0.10*	0.084*	0*	3*	4*
29	Banning Airport	357	0.17	0.14	0.124	25	52	67
30	Coachella V 1**	361	0.17	0.14	0.109	8	38	40
30	Coachella V 2**	364	0.13	0.12	0.098	2	16	16
SAN BERNARDINO COUNTY								
32	NW SB V	364	0.21	0.17	0.138	30	40	60
33	SW SB V	--	--	--	--	--	--	--
34	Cent SB V 1	362	0.20	0.17	0.133	32	43	60
34	Cent SB V 2	353	0.21	0.18	0.145	39	50	65
35	E SB V	365	0.22	0.19	0.149	43	60	76
37	Cent SB Mtns	364	0.24	0.21	0.190	57	97	97

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ppm - Parts per million parts of air, by volume.

-- - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

** - Salton Sea Air Basin.

TABLE 3-2 (CONTINUED)

1998 Air Quality Data - South Coast Air Quality Management District

Source/ Receptor Area No.	Location of Air Monitoring Station	Nitrogen Dioxide: No. Days of Data	Nitrogen Dioxide: Max. Conc. in ppm 1-hour	Nitrogen Dioxide: Average Compared to Federal Standard[b)] AAM in ppm	Nitrogen Dioxide: No. Days Std. Exc'd State > .25 ppm 1-hour
LOS ANGELES COUNTY					
1	Central LA	362	0.17	0.0398	0
2	NW Coast LA Co	351	0.13	0.0270	0
3	SW Coast LA Co	333	0.15	0.0295	0
4	S Coast LA Co	349	0.16	0.0339	0
6	W Sn Fernan V	359	0.14	0.0266	0
7	E Sn Fernan V	365	0.14	0.0416	0
8	W Sn Gabrl V	349	0.16	0.0351	0
9	E Sn Gabrl V 1	353	0.14	0.0364	0
9	E Sn Gabrl V 2	353	0.13	0.0276	0
10	Pomona/Wln V	363	0.15	0.0433	0
11	S Sn Gabrl V	358	0.14	0.0369	0
12	S Cent LA Co 1	357	0.26	0.0393	0
12	S Cent LA Co 2	--	--	--	--
13	Sta Clarita V	--	--	--	--
ORANGE COUNTY					
16	N Orange Co	361	0.13	0.0344	0
17	Cent Orange Co	362	0.13	0.0336	0
18	N Coast Orange Co	365	0.12	0.0200	0
19	Saddleback V	--	--	--	--
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	--
23	Metro Riv Co 1	321*	0.10*	0.0225*	0*
23	Metro Riv Co 2	--	--	--	--
24	Perris Valley	--	--	--	--
25	Lake Elsinore	358	0.09	0.0174	0
29	Banning/San Gor P	--	--	--	--
29	Banning Airport	359	0.26	0.0215	1
30	Coachella V 1**	347	0.07	0.0170	0
30	Coachella V 2**	--	--	--	--
SAN BERNARDINO COUNTY					
32	NW SB V	349	0.14	0.0359	0
33	SW SB V	--	--	--	--
34	Cent SB V 1	365	0.15	0.0362	0
34	Cent SB V 2	355	0.11	0.0339	0
35	E SB V	--	--	--	--
37	Cent SB Mtns	--	--	--	--

ABBREVIATIONS USED IN THE AREA NAMES: LA = Los Angeles, SB = San Bernardino, N = North, S = South, W = West, E = East, V = Valley, P = Pass, Cent = Central

ppm - Parts per million parts of air, by volume.
AAM - Annual arithmetic mean.
-- - Pollutant not monitored.
* - Less than 12 full months of data. May not be representative.
** - Salton Sea Air Basin.
b) - The federal standard is annual arithmetic mean NO^2 greater than 0.0534 ppm. No location exceeded this standard.

TABLE 3-2 (CONTINUED)

1998 Air Quality Data - South Coast Air Quality Management District

Source/ Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in ppm 1-hour[c)]	Max. Conc. in ppm 24-hour[c)]	Average Compared to Federal Standard[d)] AAM in ppm
		Sulfur Dioxide			
LOS ANGELES COUNTY					
1	Central LA	364	0.14	0.010	0.0008
2	NW Coast LA Co	--	--	--	--
3	SW Coast LA Co	359	0.03	0.014	0.0039
4	S Coast LA Co	363	0.08	0.013	0.0018
6	W Sn Fernan V	--	--	--	--
7	E Sn Fernan V	365	0.01	0.009	0.0002
8	W Sn Gabrl V	--	--	--	--
9	E Sn Gabrl V 1	--	--	--	--
9	E Sn Gabrl V 2	--	--	--	--
10	Pomona/Wln V	--	--	--	--
11	S Sn Gabrl V	--	--	--	--
12	S Cent LA Co 1	--	--	--	--
12	S Cent LA Co 2	--	--	--	--
13	Sta Clarita V	--	--	--	--
ORANGE COUNTY					
16	N Orange Co	--	--	--	--
17	Cent Orange Co	--	--	--	--
18	N Coast Orange	358	0.02	0.008	0.0004
19	Saddleback V	--	--	--	--
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	--
23	Metro Riv Co 1	361	0.03	0.010	0.0011
23	Metro Riv Co 2	--	--	--	--
24	Perris Valley	--	--	--	--
25	Lake Elsinore	--	--	--	--
29	Banning/San Gor P	--	--	--	--
29	Banning Airport	--	--	--	--
30	Coachella V 1**	--	--	--	--
30	Coachella V 2**	--	--	--	--
SAN BERNARDINO COUNTY					
32	NW SB V	--	--	--	--
33	SW SB V	--	--	--	--
34	Cent SB V 1	294*	0.02*	0.010*	0.0007
34	Cent SB V 2	--	--	--	--
35	E SB V	--	--	--	--
37	Cent SB Mtns	--	--	--	--

ABBREVIATIONS USED IN THE AREA NAMES: LA = Los Angeles, SB = San Bernardino, N = North, S = South, W = West, E = East, V = Valley, P = Pass, Cent = Central

ppm - Parts per million parts of air, by volume. AAM - Annual arithmetic mean.

* - Less than 12 full months of data. May not be representative. ** - Salton Sea Air Basin.

c) - The state standards are 1-hour average > 0.25 ppm and 24-hour average >0.04 ppm. No location exceeded state standards.

d) - The federal standard is annual arithmetic mean SO_2 greater than 80 $\mu g/m^3$ (0.03 ppm). No location exceeded this standard. The other federal standards (3-hour average > 0.50 ppm, and 24-hour average > 0.14 ppm) were not exceeded either

TABLE 3-2 (CONTINUED)

1998 Air Quality Data - South Coast Air Quality Management District

Source/ Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in µg/m³ 24-hour	No. (%) Samples Exceeding Standard: Federal >150 µg/m³ 24-hour	No. (%) Samples Exceeding Standard: State >50 µg/m³ 24-hour	Annual Averages[g]: AAM Conc. µg/m³	Annual Averages[g]: AGM Conc. µg/m³
			Suspended Particulates PM10[e]				
LOS ANGELES COUNTY							
1	Central LA	59	80	0	10(19.9)	37.4	34.2
2	NW Coast LA Co	--	--	--	--	--	--
3	SW Coast LA Co	59	66	0	7(11.9)	32.7	30.3
4	S Coast LA Co	59	69	0	6(10.2)	32.3	29.2
6	W Sn Fernan V	--	--	--	--	--	--
7	E Sn Fernan V	59	75	0	9(15.3)	36.0	32.8
8	W Sn Gabrl V	--	--	--	--	--	--
9	E Sn Gabrl V 1	57	87	0	16(28.1)	40.6	35.7
9	E Sn Gabrl V 2	--	--	--	--	--	--
10	Pomona/Wln V	--	--	--	--	--	--
11	S Sn Gabrl V	--	--	--	--	--	--
12	S Cent LA Co 1	--	--	--	--	--	--
12	S Cent LA Co 2	--	--	--	--	--	--
13	Sta Clarita V	55*	60*	0*	3(5.5)*	30.0*	27.3*
ORANGE COUNTY							
16	N Orange Co	--	--	--	--	--	--
17	Cent Orange Co	61	81	0	12(19.7)	35.9	33.0
18	N Coast Orange	--	--	--	--	--	--
19	Saddleback V	59	70	0*	6(10.2)	30.6	28.0
RIVERSIDE COUNTY							
22	Norco/Corona	57	93	0	23(40.4)	46.7	41.0
23	Metro Riv Co 1	78	116	0	42(53.8)	56.2	48.7
23	Metro Riv Co 2	--	--	--	--	--	--
24	Perris Valley	53*	98*	0*	14(26.4)*	38.1*	33.3*
25	Lake Elsinore	--	--	--	--	--	--
29	Banning/San Gor P	55*	76*	0*	5(9.1)*	27.9*	23.9
29	Banning Airport	52*	62*	0*	2(3.8)*	27.0*	23.5*
30	Coachella V 1**	58	72	0	3(5.2)	26.4	23.8
30	Coachella V 2**	80[j]	114[j]	0[j]	32(40.0)[j]	48.1[j]	43.8[j]
SAN BERNARDINO COUNTY							
32	NW SB V	--	--	--	--	--	--
33	SW SB V	59	92	0	20(33.9)	46.5	40.2
34	Cent SB V 1	60	101	0	28(46.7)	50.2	43.3
34	Cent SB V 2	58	114	0	22(37.9)	46.3	39.3
35	E SB V	60	97	0	19(31.7)	40.5	33.9
37	Cent SB Mtns	58	45	0	0	24.5	21.2

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µg/m³ - Micrograms per cubic meter of air.

AAM - Annual arithmetic mean. AGM - Annual geometric mean.

-- - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

** - Salton Sea Air Basin.

e) - PM10 samples were collected every 6 days using the size-selective inlet high volume sampler with quartz filter media

g) - Federal PM10 standard is AAM > 50 µg/m³; state standard is AGM > 30 µg/m³

j) - The data for the sample collected on a high-wind-day (158 µg/m³ on 6/16/98) was excluded according to the U.S. EPA's Natural Events Policy

TABLE 3-2 (CONTINUED)

1998 Air Quality Data - South Coast Air Quality Management District

		Particulates TSP[f)]		
			Annual Averages	
Source/ Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. in $\mu g/m^3$ 24-hour	AAM Conc $\mu g/m^3$
LOS ANGELES COUNTY				
1	Central LA	64	126	61.7
2	NW Coast LA Co	55*	91*	45.4*
3	SW Coast LA Co	60	94	55.5
4	S Coast LA Co	61	101	52.2
6	W Sn Fernan V	--	--	--
7	E Sn Fernan V	--	--	--
8	W Sn Gabrl V	58	87	46.1
9	E Sn Gabrl V 1	46*	167*	74.8*
9	E Sn Gabrl V 2	--	--	--
10	Pomona/Wln V	--	--	--
11	S Sn Gabrl V	60	140	76.3
12	S Cent LA Co 1	60	158	77.7
12	S Cent LA Co 2	--	--	--
13	Sta Clarita V	--	--	--
ORANGE COUNTY				
16	N Orange Co	--	--	--
17	Cent Orange Co	--	--	--
18	N Coast Orange	--	--	--
19	Saddleback V	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metro Riv Co 1	56	216	98.5
23	Metro Riv Co 2	62	138	71.7
24	Perris Valley	--	--	--
25	Lake Elsinore	--	--	--
29	Banning/San Gor P	--	--	--
29	Banning Airport	--	--	--
30	Coachella V 1**	--	--	--
30	Coachella V 2**	--	--	--
SAN BERNARDINO COUNTY				
32	NW SB V	62	132	67.0
33	SW SB V	--	--	--
34	Cent SB V 1	62	175	89.6
34	Cent SB V 2	60	278	84.8
35	E SB V	--	--	--
37	Cent SB Mtns	--	--	--

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$\mu g/m^3$ - Micrograms per cubic meter of air.

AAM - Annual arithmetic mean. AGM - Annual geometric mean.

-- - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

** - Salton Sea Air Basin.

f) - Total supended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media. Federal TSP standard superseded by PM10 standard, July 1, 1987.

i) - Includes make-up sampling days.

TABLE 3-2 (CONTINUED)

1998 Air Quality Data - South Coast Air Quality Management District

		Lead[f]			
				Quarters/Months Exceeding Standard[h]	
Source/ Receptor Area No.	Location of Air Monitoring Station	Max. Mo. Conc, µg/m^3	Max. Qtrly. Conc, µg/m^3	Federal >1.5 µg/m^3 Qtrly. Avg.	State >=1.5 µg/m^3 Mo. Avg.
LOS ANGELES COUNTY					
1	Central LA	.0.06	0.04	0	0
2	NW Coast LA Co	--	--	--	--
3	SW Coast LA Co	0.06	0.04	0	0
4	S Coast LA Co	0.07	0.04	0	0
6	W SN Fernan V	--	--	--	--
7	E Sn Fernan V	--	--	--	--
8	W Sn Gabrl V	--	--	--	--
9	E Sn Gabrl V 1	--	--	--	--
9	E Sn Gabrl V 2	--	--	--	--
10	Pomona/Wln V	--	--	--	--
11	S Sn Gabrl V	0.07	0.05	0	0
12	S Cent LA Co 1	0.04	0.04	0	0
12	S Cent LA Co 2	--		--	--
13	Sta Clarita V	--	--	--	--
ORANGE COUNTY					
16	N Orange Co	--	--	--	--
17	Cent Orange Co	--	--	--	--
18	N Coast Orange	--	--	--	--
19	Saddleback V	--	--	--	--
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	--
23	Metro Riv Co 1	0.08	0.04	0	0
23	Metro Riv Co 2	0.10	0.05	0	0
24	Perris Valley	--	--	--	--
25	Lake Elsinore	--	--	--	--
29	Banning/San Gor P	--	--	--	--
29	Banning Airport	--	--	--	--
30	Coachella V 1**	--	--	--	--
30	Coachella V 2**	--	--	--	--
SAN BERNARDINO COUNTY					
32	NW SB V	0.05	0.04	0	0
33	SW SB V	--	--	--	--
34	Cent SB V 1	--	--	--	--
34	Cent SB V 2	0.05	0.03	0	0
35	E SB V	--	--	--	--
37	Cent SB Mtns	--	--	--	--

ABBREVIATIONS USED IN THE AREA NAMES: LA = Los Angeles, SB = San Bernardino, N = North, S = South, W = West, E = East, V = Valley, P = Pass, Cent = Central

µg/m^3 - Micrograms per cubic meter of air. -- - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

** - Salton Sea or Majave Desert Air Basin.

f) - Total supended particulates, lead, and sulfate were determined from samples collected every 6 days by the high lume sampler method, on glass fiber filter media. Federal TSP standard superseded by M10 standard, July 1, 1987.

h) - Special monitoring immediately downwind of stationary sources of lead was carried out at several locations in 1998. The maximum monthly average concentration was 1.24 µg/m^3 and the maximum quarterly average concentration was 0.75 µg/m^3 , both recorded in Area 5, Southeast Los Angeles County.

TABLE 3-2 (CONCLUDED)

1998 Air Quality Data - South Coast Air Quality Management District

		Sulfate[f)]	
			No. (%) Samples Exceeding Standard
Source/ Receptor Area No.	Location of Air Monitoring Station	Max. Conc. in µg/m^3 24-hour	State >=25 µg/m^3 24-hour
LOS ANGELES COUNTY			
1	Central LA	10.6	0
2	NW Coast LA Co	11.2*	0*
3	SW Coast LA Co	13.5	0
4	S Coast LA Co	14.5	0
6	W Sn Fernan V	--	--
7	E Sn Fernan V	--	--
8	W Sn Gabrl V	9.2	0
9	E Sn Gabrl V 1	10.2*	0*
9	E Sn Gabrl V 2	--	--
10	Pomona/Wln V	--	--
11	S Sn Gabrl V	12.0	0
12	S Cent LA Co 1	12.0	0
12	S Cent LA Co 2	--	--
13	Sta Clarita V	--	--
ORANGE COUNTY			
16	N Orange Co	--	--
17	Cent Orange Co	--	--
18	N Coast Orange	--	--
19	Saddleback V	--	--
RIVERSIDE COUNTY			
22	Norco/Corona	--	--
23	Metro Riv Co 1	10.1	0
23	Metro Riv Co 2	12.8	0
24	Perris Valley	--	--
25	Lake Elsinore	--	--
29	Banning/San Gor P	--	--
29	Banning Airport	--	--
30	Coachella V 1**	--	--
30	Coachella V 2**	--	--
SAN BERNARDINO COUNTY			
32	NW SB V	10.5	0
33	SW SB V	--	--
34	Cent SB V 1	10.1	0
34	Cent SB V 2	11.5	0
35	E SB V	--	--
37	Cent SB Mtns	--	--

ABBREVIATIONS USED IN THE AREA NAMES: LA = Los Angeles, SB = San Bernardino, N = North, S = South, W = West, E = East, V = Valley, P = Pass, Cent = Central

µg/m^3 - Micrograms per cubic meter of air.

-- - Pollutant not monitored.

* - Less than 12 full months of data. May not be representative.

** - Salton Sea Air Basin.

f) - Total supended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media. Federal TSP standard superseded by PM10 standard, July 1, 1987.

Ozone

Unlike primary criteria pollutants that are emitted directly from an emissions source, ozone is a secondary pollutant. It is formed in the atmosphere through a photochemical reaction of VOC, NOx, oxygen, and other hydrocarbon materials with sunlight.

Ozone is a deep lung irritant, causing the passages to become inflamed and swollen. Exposure to ozone produces alterations in respiration, the most characteristic of which is shallow, rapid breathing and a decrease in pulmonary performance. Ozone reduces the respiratory system's ability to fight infection and to remove foreign particles. People who suffer from respiratory diseases such as asthma, emphysema, and chronic bronchitis are more sensitive to ozone's effects. In severe cases, ozone is capable of causing death from pulmonary edema. Early studies suggested that long-term exposure to ozone results in adverse effects on morphology and function of the lung and acceleration of lung-tumor formation and aging. Ozone exposure also increases the sensitivity of the lung to bronchoconstrictive agents such as histamine, acetylcholine, and allergens.

The national ozone ambient air quality standard is exceeded far more frequently in the district than any other area in the United States. In the past few years, ozone air quality has been the cleanest on record in terms of maximum concentration and number of days exceeding the standards and episode levels. Maximum 1-hour average and 8-hour average ozone concentrations in 1998 (0.24 ppm and 0.21 ppm) were 200 percent and 263 percent of the federal 1-hour and 8-hour standards, respectively. Ozone concentrations exceeded the 1-hour state standard at all but two monitored locations in 1998.

The 1-hour federal ozone standard was exceeded a number of days in different areas of the Basin in 1997. The number of days exceeding the federal standard varies widely between different areas of the Basin. The standard was exceeded most frequently in the Basin's inland valleys in an area extending from the East San Gabriel Valley eastward to the Riverside-San Bernardino area and into the adjacent mountains. The Central San Bernardino Valley recorded the greatest number of exceedances of the national ozone standard (57 days).

In 1997, the U.S. EPA promulgated a new national ambient air quality standard for ozone. However, a recent court decision has ordered that the U.S. EPA cannot enforce the new standard until U.S. EPA provides adequate justification for the new standard. U.S. EPA is in the process of appealing the decision. Meanwhile, the CARB and local air districts continue to collect technical information in order to prepare for an eventual State Implementation Plans (SIP) to reduce unhealthful levels of ozone in areas violating the new federal standard. California has previously

developed a SIP for the current ozone standard. The new federal air quality standard for ozone will be analyzed in the 2000 AQMP.

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of fuels. CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory systems' ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood.

CO was monitored at 21 locations in the district in 1998. The national and state 8-hour CO standards were exceeded at two and four locations, respectivelly. The highest 8-hour average CO concentration of the year (13.5 ppm) was 179 percent of the federal standard. Source/Receptor Area No. 12, South Central Los Angeles County, reported by far the greatest number of the exceedances of the federal and state CO standards (14 and 18 days, respectively) in 1997.

Nitrogen Dioxide

NO_2 is a brownish gas that is formed in the atmosphere through a rapid reaction of the colorless gas nitric oxide (NO) with atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x. NO_2 can cause health effects in sensitive population groups such as children and people with chronic lung diseases. It can cause respiratory irritation and constriction of the airways, making breathing more difficult. Asthmatics are especially sensitive to these effects. People with asthma and chronic bronchitis may also experience headaches, wheezing and chest tightness at high ambient levels of NO_2. NO_2 is suspected to reduce resistance to infection, especially in young children.

By 1991, exceedances of the federal standard were limited to one location in Los Angeles County. The Basin was the only area in the United States classified as nonattainment for the federal NO_2 standard under the 1990 Clean Air Act Amendments. No location in the area of SCAQMD's jurisdiction has exceeded the federal standard since 1992 and the South Coast Air Basin was designated attainment for the national standard in 1998. The state NO_2 standard has been met each year since 1994. In 1998, the maximum annual arithemtic mean (0.0433ppm) was 81 percent of the federal standard (the federal standard is annual arithmetic mean NO_2

greater than 0.0534 ppm.). The more stringent state standard was exceeded on one day, with a maximum 1-hour average NO_2concentration (0.26 ppm) which was 104 percent of the state standard (0.25 ppm). In 1998, the South Coast Air Basin was redesignated to attainment of the federal NO_2 ambient air quaility standard. Despite declining NO_x emissions over the last decade, further NO_x emissions reductions are necessary because NO_x emissions are PM10 and ozone precursors.

Particulate Matter

PM10 is defined as suspended particulate matter 10 microns or less in diameter and includes a complex mixture of man-made and natural substances including sulfates, nitrates, metals, elemental carbon, sea salt, soil, organics and other materials. PM10 may have adverse health impacts because these microscopic particles are able to penetrate deeply into the respiratory system. In some cases, the particulates themselves may cause actual damage to the alveoli of the lungs or they may contain adsorbed substances that are injurious. Children can experience a decline in lung function and an increase in respiratory symptoms from PM10 exposure. People with influenza, chronic respiratory disease and cardiovascular disease can be at risk of aggravated illness from exposure to fine particles. Increases in death rates have been statistically linked to corresponding increases in PM10 levels.

In 1998, PM10 was monitored at 20 locations in the district. There were no exceedances of the federal 24-hour standard (150 $\mu g/m^3$), while the state 24-hour standard (50 $\mu g/m^3$) was exceeded at all 20 locations. The federal standard (annual aritmetic mean greater than 50 $\mu g/m^3$) was exceeded in two locations, and the state standard (annual geometric mean greater than 30 $\mu g/m^3$) was excced at 13 locations.

In 1997, the U.S. EPA promulgated a new national ambient air quality standard for PM2.5, particulate matter 2.5 microns or less in diameter. The PM2.5 standard complements existing national and state ambient air quality standards that target the full range of inhalable PM10. Efforts to characterize PM2.5 and comply with the federal standards will provide further progress towards attaining California's own PM10 standards. The CARB and local air districts will be developing SIPs to reduce unhealthful levels of PM2.5 in areas violating the new federal standards. These standards will be analyzed in the 2000 AQMP. A new SIP for PM2.5 will be prepared in the 2006 to 2008 timeframe.

Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Though SO_2 concentrations have been reduced to

levels well below state and federal standards, further reductions in emissions of SO_2 are needed to comply with standards for other pollutants (sulfate and PM10).

Sulfates

Sulfates are a group of chemical compounds containing the sulfate group, which is a sulfur atom with four oxygen atoms attached. Though not exceeded in 1993, 1996, and 1997, the state sulfate standard was exceeded at three locations in 1994 and one location in 1995. There are no federal air quality standards for sulfate.

Lead

Lead concentrations once exceeded the state and national ambient air quality standards by a wide margin, but have not exceeded state or federal standards at any regular monitoring station since 1982. Though special monitoring sites immediately downwind of lead sources recorded very localized violations of the state standard in 1994, no violations were recorded at these stations since that time.

Visibility

Since deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality, the state of California has adopted a standard for visibility or visual range. Until 1989, the standard was based on visibility estimates made by human observers. The standard was changed to require measurement of visual range using instruments that measure light scattering and absorption by suspended particles.

It has been determined that the calibration of the instruments used to measure visibility was faulty, and no reliable data are available for 1998.

Volatile Organic Compounds

It should be noted that there are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because reduction in VOC emissions reduces the rate of photochemical reactions that contribute to the formation of ozone. They are also transformed into organic aerosols in the atmosphere, contributing to higher PM10 and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are

suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, one hydrocarbon component of VOC emissions, is known to be a human carcinogen.

HAZARDS

Hazardous Materials Management Planning

State law requires detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of to prevent or mitigate injury to health or the environment in the event that such materials are accidentally released. These requirements are enforced by the California Office of Emergency Services (OES). Federal laws, such as the Emergency Planning and Community-Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act or SARA) impose similar requirements.

Hazardous Materials Transportation

The U.S. Department of Transportation (U.S.DOT) has the regulatory responsibility for the safe transportation of hazardous materials between states and to foreign countries. U.S.DOT regulations govern all means of transportation, except for those packages shipped by mail. Hazardous materials sent by U.S. mail are covered by the U.S. Postal Service (USPS) regulations. U.S.DOT regulations are contained in the Code of Federal Regulations, Title 49 (49 CFR); USPS regulations are in 39 CFR.

Common carriers are licensed by the California Highway Patrol (CHP), pursuant to the California Vehicle Code, §32000. This section requires licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of their business in the delivery of hazardous materials.

Under the Resource Conservation and Recovery Act (RCRA), the U.S.EPA sets standards for transporters of hazardous waste. In addition, the State of California regulates the transportation of hazardous waste originating or passing through the state; state regulations are contained in CCR, Title 13. Hazardous waste must be regularly removed from generating sites by licensed hazardous waste transporters. Transported materials must be accompanied by hazardous waste manifests.

Two state agencies have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies: the

California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

The CHP enforces hazardous materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP. The CHP conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at 72 locations throughout the state.

Hazardous Material Worker Safety Requirements

The California Occupational Safety and Health Administration (Cal/OSHA) and the Federal Occupational Safety and Health Administration (Fed/OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. In California, Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations.

Under the authority of the Occupational Safety and Health Act of 1970, Fed/OSHA has adopted numerous regulations pertaining to worker safety (contained in 29 CFR - Labor). These regulations set standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries. Some OSHA regulations contain standards relating to hazardous materials handling, including workplace conditions, employee protection requirements, first aid, and fire protection, as well as material handling and storage. Because California has a federally-approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace (which are detailed in CCR, Title 8) include requirements for employee safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances. The hazard communication program also requires that Material Safety Data Sheets (MSDS) be available to employees and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and emergency evacuation training).

Both federal and state laws include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. The training must include instruction in methods for the safe handling of hazardous materials, an explanation of MSDS, use of emergency response equipment and supplies, and an explanation of the building emergency response plan and procedures.

Chemical safety information must also be available at the workplace. More detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be kept in accessible places. Compliance with these regulations reduces the risk of accidents, worker health effects, and emissions.

The National Fire Code (NFC), Standard 45 (published by the National Fire Protection Association) contains standards for laboratories using chemicals, which are not requirements, but are generally employed by organizations in order to protect workers. These standards provide basic protection of life and property in laboratory work areas through prevention and control of fires and explosions, and also serve to protect personnel from exposure to non-fire health hazards.

While NFC Standard 45 is regarded as a nationally recognized standard, the California Fire Code (24 CCR) contains state standards for the use and storage of hazardous materials and special standards for buildings where hazardous materials are found. Some of these regulations consist of amendments to NFC Standard 45. State Fire Code regulations require emergency pre-fire plans to include training programs in first aid, the use of fire equipment, and methods of evacuation.

Hazardous Waste Handling Requirements

The federal RCRA of 1976 created a major new federal hazardous waste regulatory program that is administered by the U.S. EPA. Under RCRA, U.S. EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste.

RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the concept of regulating hazardous wastes from generation through disposal. HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous wastes.

Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as the federal RCRA requirements. U.S. EPA approved California's program to implement federal regulations as of August 1, 1992.

The Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency Department of Toxic Substance Control (DTSC). Under HWCL, DTSC has adopted extensive regulations governing the generation, transportation, and disposal of hazardous wastes. HWCL differs little from RCRA; both laws impose "cradle to grave" regulatory systems for handling hazardous wastes in a manner that protects human health and the environment. Regulations implementing HWCL are generally more stringent than regulations implementing RCRA.

Regulations implementing HWCL list over 780 hazardous chemicals as well as nearly 30 more common materials that may be hazardous. HWCL regulations establish criteria for identifying, packaging and labeling hazardous wastes. They prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Under both RCRA and HWCL, hazardous waste manifests must be retained by the generator for a minimum of three years. Hazardous waste manifests list a description of the waste, its intended destination and regulatory information about the waste. A copy of each manifest must be filed with DTSC. The generator must match copies of hazardous waste manifests with certification notices from the treatment, disposal, or recycling facility.

Emergency Response to Hazardous Materials and Wastes Incidents

Pursuant to the Emergency Services Act, the State has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government agencies and private persons. Response to hazardous materials incidents is one part of this plan. The Plan is administered by OES, which coordinates the responses of other agencies including U.S. EPA, CHP, Department of Fish and Game, Regional Water Quality Control Board (RWQCB), and local fire departments. See California Government Code, §8550.

In addition, pursuant to the Hazardous Materials Release Response Plans and Inventory Law of 1985 (the Business Plan Law), local agencies are required to develop "area plans" for response to releases of hazardous materials and wastes. These emergency response plans depend to a large extent on the business plans submitted by persons who handle hazardous materials. An area plan must include pre-emergency planning of procedures for emergency response, notification and coordination of affected government agencies and responsible parties, training, and follow-up.

Hazardous Materials Incidents

The California Hazardous Materials Incident Reporting System (CHMIRS) is a post-incident reporting system to collect data on incidents involving the accidental release of hazardous materials. During 1997, the counties of Orange, Riverside, San Bernardino and Los Angeles reported 1,527 spills. The breakdown is as follows: 761 spills in Los Angeles County, 243 spills in Orange County, 306 spills in Riverside County, and 217 spills in San Bernardino County. Of the spills that occurred in these counties in 1997, 640 were petroleum spills.

WATER RESOURCES

California has an extensive regulatory program to control water pollution. The most important statute affecting water quality issues is the Porter-Cologne Act, which gives the State Water Resources Control Board (SWRCB) and the nine RWQCBs broad powers to protect surface and groundwater supplies in California, regulate waste disposal, and require cleanup of hazardous conditions (California Water §§13000 - 13999.16). In particular, the SWRCB establishes water-related policies and approves water quality control plans, which are implemented and enforced by the RWQCBs. Five RWQCBs have jurisdiction over areas within the boundaries of the District. These Regional Boards include: Los Angeles, Lahontan, Colorado River Basin, Santa Ana, and San Diego.

It is the responsibility of each regional board to prepare water quality control plans to protect surface and groundwater supplies within its region. These plans must identify important regional water resources and their beneficial uses, such as domestic, navigational, agricultural, industrial, and recreational; establish water quality objectives, limits or levels of water constituents or characteristics established for beneficial uses and to prevent nuisances; and present an implementation program necessary to achieve those water quality objectives. These plans also contain technical information for determining waste discharge requirements and taking enforcement actions. The plans are typically reviewed and updated every three years (California Water §13241).

California dischargers of waste, which “could affect the quality of the waters of the state” are required to file a report of, waste discharge with the appropriate regional water board (California Water §13260). The report is essentially a permit application and must contain information required by the regional board. After receipt of a discharge report, the regional board will issue "waste discharge requirements" analogous to a permit with conditions prescribing the allowable nature of the proposed discharge (California Water §§13263, 13377, and 13378).

National Pollution Discharge Elimination System Requirements

Most discharges into state waters are regulated by the National Pollution Discharge Elimination System (NPDES), a regulatory program under the federal Clean Water Act. The NPDES is supervised by U.S. EPA, but administered by SWRCB. NPDES requirements apply to discharges of pollutants into navigable waters from a point source, discharges of dredged or fill material into navigable waters, and the disposal of sewage sludge that could result in pollutants entering navigable waters. California has received U.S. EPA approval of its NPDES program.

Pursuant to California's NPDES program, any waste discharger subject to the NPDES program must obtain an NPDES permit from the appropriate RWQCB. The permits typically include criteria and water quality objectives for a wide range of constituents. The NPDES program is self-monitoring, requiring periodic effluent sampling. Permit compliance is assessed monthly by the local RWQCB and any NPDES violations are then categorized and reported to U.S. EPA on a quarterly basis.

U.S. EPA has also published regulations that require certain industries, cities and counties to obtain NPDES permits for stormwater discharges [(55 Fed. Reg. (1990)]. The new regulations set forth permit application requirements for classes of stormwater discharges specifically identified in the federal Clean Water Act. The regulated stormwater discharges include those associated with industrial activity and from municipal storm sewer systems serving a population of 100,000 or more.

Discharges to Publicly Owned Treatment Works (POTWs)

Water discharges to a public sewage system (referred to generically as a POTW), rather than directly to the environment, are not subject to the NPDES discharge requirements. Rather, such discharges are subject to federal pretreatment requirements under §§ 307(b) and (c) of the Clean Water Act [(33 U.S.C., §1317(b)-(c))]. Though these pretreatment standards are enforced directly by U.S. EPA, they are implemented by local sanitation districts (Monahan et al., 1993). The discharger, however, has the responsibility to ensure that the waste stream complies with the pretreatment requirements of the local system. Any facility using air pollution control equipment affecting water quality must receive a permit to operate from the local sanitation district. In cases where facilities modify their equipment or install air pollution controls that generate or alter existing wastewater streams, owner/operators must notify the local sanitation district and request that their existing permit be reviewed and modified.

In order to ensure compliance with wastewater pretreatment regulations, local sanitation districts, such as the County Sanitation Districts of Los Angeles County,

sample and analyze the wastewater streams from facilities approximately two to four times per year. Persons who violate the state's water quality laws are subject to a wide array of enforcement provisions.

In 1990, U.S. EPA revised and extended existing regulations to further regulate hazardous waste dischargers and require effluent testing by POTWs. To comply with revised permit limits, POTWs may alter their operations or impose more stringent local limits on industrial user discharges of hazardous wastes (Monahan, et al., 1993). POTWs in California are operated by sanitation districts that adopt ordinances establishing a permit system and fee structure. There are 47 agencies providing wastewater treatment in the District, the largest three being the County Sanitation Districts of Los Angeles County, Los Angeles City Sanitation District, and the Orange County Sanitation District. These three agencies account for 71 percent of influent wastewater in the District (SCAG, 1993d).

There are a variety of advanced chemical and physical treatment techniques and equipment that remove chemical contaminants from waste streams. Depending upon the characteristics of the contaminants in the wastewater stream, it may be necessary for the wastewater to undergo a series of treatment processes. Table 3-3 identifies some examples of wastewater treatment methodologies and the appropriate sequence in the wastewater treatment process in which they would occur.

TABLE 3-3

Examples of Wastewater Treatment Methods

INITIAL TREATMENT	INTERMEDIATE TREATMENT	ADVANCED TREATMENT
Sedimentation	Trickling Filters	Carbon Adsorption
Neutralization	Activated Sludge	Ion Exchange
Chemical Coagulation	(aerobic bacteria)	Air Stripping
Precipitation	Chemical Oxidation	Reverse Osmosis
	(chlorination & ozonation)	Electrodialysis

Source: Lippmann and Schlesinger, 1979; Vembu, 1994.

Existing Water Sources and Uses

Local water districts are the primary water purveyors in the district. These water districts receive some of their water supply from surface and groundwater resources within their respective jurisdictions, with any shortfall made up from supplemental water purveyors. In some cases, 100 percent of a local water district's water supply

may come from supplemental sources. The main sources of surface water used by local water districts within the District are the Colorado, Santa Ana, and Santa Clara Rivers. The primary groundwater sources used by local water districts are as follows:

- Los Angeles County: Raymond, San Fernando, and San Gabriel Water Basins.
- San Bernardino and Riverside counties: Upper Santa Ana Valley Water Basin.
- Riverside County: Coachella Valley Water Basin.
- Orange County: Coastal Plain Water Basin.

The major supplemental water importer in the district is the Southern California Metropolitan Water District (MWD), which is made up of 12 member agencies, 14 member cities, and one County Water Authority.

Water Consumption

Estimating total water use in the district is difficult because the boundaries of supplemental water purveyors' service areas bear little relation to the boundaries of the district and there are dozens of individual water retailers within the district.

Total water demand within the district was approximately 4.22 million-acre feet (MAF) or about 1.4 trillion gallons in fiscal year 1995[2] (July 1994 through June 1995). About two-thirds of that demand occurred in the service area of the MWD. The MWD's service area includes southern Los Angeles County, including the San Gabriel and San Fernando Valleys, all of Orange County, the western portion of Riverside County, and the Chino Basin in southwestern San Bernardino County. The MWD supplied 1.54 MAF and the Los Angeles Department of Water and Power (LADWP) supplied 0.36 MAF in the fiscal year 1995 (MWD, 1996). The remaining water was drawn from local water sources by local water districts within the MWD service area. About 89 percent of water consumed in the MWD region goes to urban uses with the rest going to agriculture (Rodrigo, 1996). Sixty-six percent of urban water use occurs in the residential sector, with another 17 percent in the commercial and six percent in the industrial sectors. Remaining water uses include public entities, fire fighting, etc. Smaller water purveyors supplied water to northern and eastern areas of the district. Table 3-4 shows water demand by water district.

Most of the outlying regions of the district are heavily dependent on local surface and groundwater resources as major sources of supply for both domestic and agricultural uses. Supplemental supplies are also available in some areas through California State

[2]One acre foot (AF) is equivalent to 325,800 gallons.

Water Project (SWP) contractors. The largest water supply source in this subregion is the Colorado River.

Past population growth and agricultural development in the outlying regions have resulted in groundwater pumping beyond safe yield levels. The Antelope Valley Basin (north Los Angeles County), Mojave Basin (San Bernardino County), and the Coachella Valley Basin (Riverside County) are all in overdraft condition.

TABLE 3-4
1994/1995 Water Demand

WATER DISTRICT	1994/1995 WATER DEMAND (MAF)
Metropolitan Water District Service Area:	
MWD	1.54
Los Angeles Aqueducts	0.36
Local Supplies	1.83
Local Supplies:	
Coachella Valley Water District	0.73
Palo Verde Irrigation District	0.90
San Bernardino Valley Municipal	0.30
Antelope Valley/East Kern Water Agency	0.10
Desert Water Agency	0.037
Castaic Lake Water Agency	0.016
Palmdale Water Agency	0.018
San Gorgonio Pass Water Agency	0.018
Crestline/Lake Arrowhead Water Agency	0.002
Little Rock Creek Irrigation District	0.002

Source:MWD, 1996

Local Water Supplies

Local surface water sources and groundwater basins provide about one-third of the water supply in the district (calculated from data in SCAG, 1993d). The largest surface water sources in the region are the Colorado, the Santa Ana, and the Santa Clara River systems. Major groundwater basins in the region include the Central, Raymond, San Fernando, and San Gabriel basins (Los Angeles County); the Upper Santa Ana Valley Basin system (San Bernardino and Riverside counties); the Coastal Plain Basin (Orange County); and the Coachella Valley Basin (Riverside County).

Local water resources are fully developed and are expected to remain relatively stable in the future on a region wide basis. However, local water supplies may decline in certain localized areas and increase in others. Several groundwater basins in the region are threatened by overdraft conditions, increasing levels of salinity, and contamination by toxics or other pollutants. Local supplies may also be reduced by conversion of agricultural land to urban development, thereby reducing the land surface available for groundwater recharge. Increasing demand for groundwater may also be limited by water quality, since levels of salinity in sources currently used for irrigation could be unacceptably high for domestic use without treatment.

Imported Water Supplies

Several major conveyance systems bring water to the urbanized portion of the region from: northern California via the SWP; the Sierra Nevada via the Los Angeles Aqueduct; and the Colorado River via the Colorado River Aqueduct. The All-American/Coachella Canals deliver agricultural irrigation water from the Colorado River to the Coachella Valley. The continued availability of water from these sources is uncertain at current levels. The yield of the SWP system is expected to decrease in the future as water use in areas of origin increases, Central Valley Project (CVP) contractual obligations increase, and users with prior rights to northern California water supplies begin to exercise those rights (SCAG, 1987). The following subsections detail some of the major sources of water supplied to the area within the jurisdiction of the SCAQMD.

State Water Project

The SWP supplied 0.57 MAF to the MWD in 1995 (Muir, 1996). Contractors in the MWD service area hold contracts for 1.86 MAF. California's total apportionment of SWP water is 4.23 MAF per year, with a dependable supply of about 2.1 MAF. If additional water supplies are not secured, SWP contractors in the region will face increasing risks of water supply deficiencies during dry years. Efforts to increase dependable yields through the SWP have included a Coordinated Operation Agreement between the State and the U.S. Bureau of Reclamation, completion of additional pumping capacity in the San Francisco Bay Delta, and development of additional off-stream storage facilities. If these efforts are successful, annual net use of SWP may increase by 0.8 MAF by 2010.

Los Angeles Aqueduct

The Los Angeles Aqueduct provided about 0.17 MAF of water in 1992 (RWQCB, 1993). Recent court decisions (September, 1994) have required that minimum stream flows be established in four of the streams feeding Mono Lake so that fish and water fowl habitats can be restored and protected (Frink, 1996). In addition, California courts have ruled that the average lake surface elevation of Mono Lake be restored to 6,392 feet above mean sea level. To comply with these rulings, the City of Los Angeles anticipates it will have to ultimately reduce diversion of Mono Lake water by as much as 60,000 AF per year.

Colorado River Aqueduct

Currently, California's basic apportionment of Colorado River water is 4.4 MAF. However, due to above-normal runoff in the Colorado River Basin, and the states of Arizona and Nevada not taking their full apportionment, California has received an average of 4.8 MAF per year in recent years (SCAG, 1993d).

With the Central Arizona Project operational and, therefore, diverting Colorado River water, MWD staff has conservatively projected future supply at 0.62 MAF per year from existing programs and facilities and is considering programs to increase its dependable Colorado River supplies (Schempp, 1996).

Subregional Water Quality

The following subsections consider the quality of surface and groundwater sources that lie within the coastal subregion and the outlying subregion. Water quality of the major water basins in each subregion is discussed for both surface and groundwater sources.

Coastal Subregion Water Quality

The Los Angeles River Basin area is located in southern Los Angeles County and is drained by the Los Angeles River, San Gabriel River, and Malibu Creek (RWQCB, 1993).

- Surface water quality of the Los Angeles River system has minor problems that are attributable to high pH, nitrate/nitrite, chlorine levels, and low dissolved oxygen. The Los Angeles River drainage basin includes large recreation and wildlife habitat areas in the San Fernando Valley. Urban runoff and illegal dumping are the major sources of water quality problems in this river system.

- Minor water quality problems caused by urban runoff and point source discharges have occurred in urbanized portions of the San Gabriel River drainage system, but water quality is good in the source areas of the San Gabriel Mountains.

- Malibu Creek and its tributaries are an intermittent stream system that drains a portion of the western Santa Monica Mountains. This drainage area has high total dissolved solids (TDS) levels and, in general, water quality has declined as a result of wastewater discharge into the creek. Non-point source pollutants of concern include excess nutrients, sediment and bacteria.

Groundwater sources of the Los Angeles River Basin include the Los Angeles Coastal Plain, San Fernando Valley, and San Gabriel Valley Basins (RWQCB, 1993).

- Water quality in the Los Angeles Coastal Plain Basin is generally good, although saltwater intrusion has been a problem along the coast. This problem is currently being addressed by the Los Angeles County Flood Control District through the Dominguez Gap Barrier project. The purpose of the project is to create a fresh water pressure ridge to prevent further landward movement of seawater.

- Hydrocarbons from industry, and nitrates from subsurface sewage disposal and past agricultural activities are the primary pollutants in much of the groundwater throughout the San Gabriel and San Fernando Valley Groundwater Basins. Pollution has shut down at least 20 percent of municipal groundwater production capacity in both basins. The California Department of Toxic Substances Control has designated large areas of these basins as high priority Hazardous Substances Cleanup sites. The U.S. EPA has designated both areas as Superfund sites. Both the RWQCB and U.S. EPA are overseeing investigations to further define the extent of pollution, identify the responsible parties and begin remediation.

Santa Ana River Basin

The Santa Ana River Basin area is located in Orange County and the western (non-desert) portion of San Bernardino and Riverside counties. Improper operation of individual sewage storage or treatment systems in the upper Santa Ana River area has degraded surface water quality. High Total Dissolved Solids (TDS) and nutrient levels have affected lower portions of the river due to low quality rising groundwater, urban runoff, and nonpoint agricultural pollution. Lakes in the area receive water from the SWP and Colorado River and have fair to good water quality.

Primary groundwater basins in the Santa Ana River Basin include Orange County Coastal Plain, Upper Santa Ana River Valley, San Jacinto, Elsinore, and San Juan Creek. Groundwater quality is generally good in this area. Some deterioration has occurred due to recharge by Colorado River water, percolation of irrigation

wastewater, overdrafting, seawater intrusion, and mineralization. Water quality has been compromised further by municipal, industrial, and agricultural waste disposal. Saltwater intrusion problems have been somewhat alleviated by injection of water into wells of the Talbert Gap Barrier Project and increased use of Colorado River water by southern Orange County.

Outlying Subregion Water Quality

Santa Clara River Basin

The Santa Clara River Basin area is located in Ventura County and northern Los Angeles County and is drained by the Santa Clara River, which empties into the Pacific Ocean near the city of Oxnard. Surface water sources are provided mainly by reservoirs in the area, which are in turn supplied by water from the SWP and the Los Angeles Aqueduct. These water sources provide water that is generally of high quality. Tributary creeks typically possess good water quality except during low flows. Water quality in the Santa Clara River is relatively poor and further degrades downstream when groundwaters rise, resulting in high TDS levels, irrigation return flows, and other contaminants. Threats to water quality include increasing urban development in floodplain areas, which requires flood control measures. These measures result in increased flows and erosion and loss of habitat (RWQCB, 1993).

Nine groundwater basins are located in the Santa Clara River Basin. Groundwater quality is generally good in the upper Santa Clara River Basin (Los Angeles County) but worsens near the Los Angeles County-Ventura County line. High TDS concentrations are common in the Santa Clara River Valley area.

Desert Basins

The desert subregion includes most of San Bernardino county, eastern Riverside County, and Imperial County. Few water quality problems exist in this area with the exception of the Salton Sea vicinity, which has high and increasing salinity as a result of irrigation return flows, increasing salinity of Colorado River water, and inadequately treated municipal discharges (particularly from sources in Mexico) (Coachella Valley Water District, 1993).

Groundwater quality problems in the South Lahontan Basin, located in desert subregion portions of Los Angeles and San Bernardino counties, include overdrafting and pollution from mining and sewage wastes. West Colorado River Basin has increasingly high salinity near the Colorado River. Local groundwater supplies along the Colorado River are also poor where they are affected by saline river water, failing septic tanks and leachfield systems, and irrigation return flows.

ENERGY RESOURCES

Electricity

The following information was compiled prior to deregulation of California's electric utility industry. The influence of deregulation is still not completely known. The SCAQMD will update the existing setting relative to electricity if appropriate information becomes available before this EA is certified.

A decade ago, California's electric power generating utilities were heavily dependent on oil and natural gas for power generation. Current electricity supply, however, is generated by a number of energy resources: natural gas, petroleum, coal, hydroelectric, biomass, geothermal, fuel cell, wind, solar, and nuclear.

There are a variety of commercial, residential, and industrial end-users of electricity in the region. Electricity is transmitted to end-users through an extensive electricity distribution system. Electricity distribution is provided for the Southern California planning area by Southern California Edison (SCE), the LADWP and the municipal utilities of Burbank, Glendale, and Pasadena (BGP). The LADWP and BGP service areas are located entirely within the boundaries of the SCAQMD, while SCE's territory extends above the northern borders of Los Angeles County and San Bernardino County to include Ventura, Inyo, Mono and portions of Kings and Kern counties. Although the SCE planning area is large, most of the electricity sold by SCE is to areas within the SCAQMD's area of jurisdiction. In 1993 electricity sales within this area made up 86 percent of SCE's residential, 88 percent of its commercial, and 88 percent of its industrial electricity sales. The cities of Anaheim, Azusa, Banning, Colton, Riverside and Vernon do not generate their own power, but may in some instances be responsible for electricity distribution. Such cities are identified as "Resale Cities" by the California Public Utilities Commission (CPUC).

Annual energy demand is the total amount of electricity consumed in a year. Peak power demand is an instantaneous maximum power demand that could occur at any time during a specific year. Peak power demand normally occurs during hot summer afternoons, most likely due to the increased load from air conditioning used to cool homes and places of businesses.

Between 1990 and 2010, projected growth in total annual energy demand in SCAQMD's area of jurisdiction is expected to increase by 48,622 gigawatt hours (GWh) to 166,346 GWh, a 41 percent increase. During the same time period, peak electricity demand is expected to grow by 8,610 megawatts (MW) to 32,533 MW, a 36 percent increase.

The forecasted total annual supply for the region is expected to increase (from 1992 to 2010) by 47,435 GWh to 167,409 GWh. The maximum instantaneous peak power supply is expected to increase during the same period by 9,142 MW to 40,128 MW. The forecasted supply resources are expected to adequately supply total annual energy demand and maximum instantaneous peak power demand for forecasted baseline years.

Natural Gas

Natural gas is a fossil fuel widely used by stationary sources in the district. It is consumed by end-users in the residential, commercial, and industrial sectors. Its use is also increasing in the transportation sector.

The residential sector uses natural gas primarily for water and space heating equipment. In addition to use for water and space heating equipment, commercial facilities such as office buildings, grocery stores, schools, hotels and motels, hospitals, and restaurants use natural gas for space heating and cooling, refrigeration and food preparation. Industrial processes consume natural gas in a variety of processes including water heating and steam generation, drying and curing processes, metal melting, heat treatment and general space heating, as well as cogeneration. Because of its clean burning characteristics, natural gas-powered technology is considered to be BACT for most combustion sources in the district and, therefore, it is required by the SCAQMD to be the primary fuel for most combustion sources. The transportation sector is beginning to use compressed natural gas (CNG) as an alternative clean motor vehicle fuel. In the utility electric generation (UEG) sector, natural gas is used as the primary combustion fuel in power generating equipment such as utility boilers and gas turbines (California Gas and Electric Utilities, 1994).

Although natural gas (consisting primarily of methane) can be synthetically produced, current supplies are obtained primarily from naturally occurring accumulations within the earth. Natural gas is produced from wells and is processed to remove the "wet" portions. Natural gas is plentiful in the continental U.S. and Alaska, and extensive additional supplies are located in Canada and Mexico. Southern California has some natural gas supplied from on-shore and off-shore sources, but it relies on out-of-state production for 89 percent of its supply (California Gas and Electric Utilities, 1994). Out-of-state supplies, however, will increase with time. Fields in the southwestern U.S., the Rocky Mountain area, and Canada are expected to be secure and reliable sources to meet demand through the forecast period ending in 2010. The Southern California Gas Company's gas balance forecast indicates an ability to provide high levels of gas service to all market sectors, even under cold-temperature conditions. No curtailment is forecast.

In general, Southern California has an extensive gas transmission and distribution system. The Southern California Gas Company alone maintains over 43,300 miles of pipeline with service connections to well over four million industries, business and residences. The Southern California Gas Company's service territory extends beyond the northern border of Los Angeles County to include Ventura, San Luis Obispo, Kings, Kern, Tulare, and Fresno counties. Prior to February 1992, natural gas was distributed to the Southern California Gas Company service territory through three major interstate pipelines (Transwestern, El Paso, and California) with a total estimated delivery capacity of 2,800 million (MM) cubic feet per day (cf/day). That capacity has now been increased to 3,680 MMcf/day with the opening of the Kern River/Mojave pipeline system, delivering gas from southwestern Wyoming. In November of 1993, when Pacific Gas & Electric's (PG&E) new Pacific Gas Transmission (PGT) pipeline became operational, another 350 MMcf/day became available to Southern California, for a total supply capacity of 4,030 MMcf/day. The Southern California Gas Company can meet an "instantaneous" demand of approximately seven billion cubic feet (Bcf) in winter months, for short periods of time when the weather is unusually cold (California Gas and Electric Utilities, 1994).

SOLID / HAZARDOUS WASTE

Solid Waste

California Code of Regulations (CCR) Title 14, Division 7 provides the state standards for the management of facilities that handle and/or dispose of solid waste. CCR Title 14, Division 7 is administered by the California Integrated Waste Management Board (CIWMB) and the designated Local Enforcement Agency (LEA). The designated LEA for each county is the County Department of Environmental Health. CCR Title 14, Division 7 establishes general standards to provide required levels of performance for facilities that handle and/or dispose of solid waste. Other requirements included in CCR Title 14, include operational plans, closure plans, and postclosure monitoring and maintenance plans. This regulation covers various solid waste facilities including, but not limited to: landfills, materials recovery facilities (MRFs) and transfer stations and composting facilities.

The district's four-county region has permitted capacity to accept over 111,198 tons of municipal solid waste (MSW) each day. Solid wastes consist of residential wastes (trash and garbage produced by households), construction wastes, commercial and industrial wastes, home appliances and abandoned vehicles, and sludge residues (waste remaining at the end of the sewage treatment process).

A total of 39 Class III active landfills and two transformation facilities are located within the district with a total capacity of 111,198 tons per day. Los Angeles County

has 14 active landfills with a permitted capacity of over 58,000 tons per day. San Bernardino County has nine public and private landfills within the district's boundaries with a combined permitted capacity of 11,783 tons per day. Riverside County has 12 active sanitary landfills with a total capacity of 14,707 tons per day. Each of these landfills is located within the unincorporated area of the county and is classified as Class III. Orange County currently has four active Class III landfills with a permitted capacity of over 25,000 tons per day.

Hazardous Waste

Hazardous materials as defined in 40 CFR 261.20 and California Title 22 Article 9 (including listed substances, 40 CFR 261.30) are disposed of in Class I landfills. California has enacted strict legislation for regulating Class I landfills (California Health and Safety Code, Sections 25209 - 25209.7). For example, the treatment zone of a Class I landfill must not extend more than five feet below the initial surface and the base of the zone must be a minimum of five feet above the highest anticipated elevation of underlying groundwater [H&S Code, Section 25209.1(h)]. The Health and Safety Code also require Class I landfills to be equipped with liners, a leachate collection and removal system, and a groundwater monitoring system (H&S Code, Section 25209.2(a)). Such systems must meet the requirements of the California Department of Toxic Substances Control (DTSC) and the California Water Resources Control Board (H&S Code, Section 25209.5).

Currently, the area within the district does not have any Class I landfills approved that accept hazardous wastes. There are currently two Class I landfills located in California. Chemical Waste Management Corporation in Kettleman City is a treatment, storage and disposal facility which has a capacity of 13 million cubic yards. At current disposal rates, this capacity would last for approximately 26 years (Turek, 1996). Laidlaw Environmental has a Class I facility in Buttonwillow with a permitted capacity is 13 million cubic yards. The current capacity is 800 thousand cubic yards. At current disposal rates, this capacity would last for approximately three years. In addition, treatment services and landfill disposal are available from the Laidlaw facility located in Westmoreland (Buoni, 1996).

In addition, hazardous waste can also be transported to permitted facilities outside of California. The nearest out-of-state landfills are U.S. Ecology, Inc., located in Beatty, Nevada; USPCI, Inc., in Murray, Utah; and Envirosafe Services of Idaho, Inc.; in Mountain Home, Idaho. Incineration is provided at the following out-of-state facilities: Aptus, located in Aragonite, Utah and Coffeyville, Kansas; Rollins Environmental Services, Inc., located in Deer Park, Texas and Baton Rouge, Louisiana; Chemical Waste Management, Inc., in Port Arthur, Texas; and Waste Research & Reclamation Co., Eau Claire, Wisconsin (Kirby, 1996).

CONSISTENCY

The Southern California Association of Governments (SCAG) and the SCAQMD have developed, with input from representatives of local government, the industrial community, public health agencies, the U.S. EPA - Region IX, and the CARB, guidance on how to assess consistency within the existing general development planning process in the district. Pursuant to the development and adoption of its Regional Comprehensive Plan and Guide (RCPG), SCAG has developed an Intergovernmental Review Procedures Handbook (June 1, 1995). The SCAQMD also adopted criteria for assessing consistency with regional plans and the AQMP in its CEQA Air Quality Handbook. The following subsections address consistency between the proposed 1999 amendments and relevant regional plans pursuant to the SCAG Handbook and SCAQMD Handbook.

Consistency with Regional Comprehensive Plan and Guide (RCPG) Policies

The RCPG provides the primary reference for evaluating project consistency. The RCPG serves as a regional framework for decision-making relative to growth and change that is anticipated during the next 20 years and beyond. The Growth Management Chapter (GMC) of the RCPG contains population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies, used by SCAG in all phases of implementation and review. The GMC contains the overall goals for the region, which include the following: (1) re-invigorate the region's economy, (2) avoid social and economic inequities and the geographical isolation of communities, and (3) maintain the region's quality of life.

Consistency with Growth Management Chapter (GMC) to Improve the Regional Standard of Living

The growth management goals are to develop urban forms that: enable individuals to spend less income on housing cost, minimize public and private development costs, and enable firms to be more competitive, which furthers the regional strategic goal of stimulating the regional economy. Relative to the GMC, the proposed 1999 amendments would not interfere with achieving these goals, nor would they interfere with any powers exercised by local land use agencies. Although, the proposed 1999 AQMP amendments could impose new permit requirements on existing facilities, permit streamlining measures specifically to minimize red tape and expedite the permitting process have been implemented by the SCAQMD, which should further efforts to maintain economic vitality and competitiveness.

Consistency with Growth Management Chapter (GMC) to Provide Social, Political and Cultural Equity

The growth management goals to develop urban forms that avoid economic and social polarization promote the regional strategic goals of minimizing social and geographic disparities and of reaching equity among all segments of society. The proposed 1999 amendments would not interfere with social, political, or cultural goals in the GMC. Local jurisdictions and state agencies, employers and service agencies are providing adequate training and retraining of workers, and preparing the labor force to meet the challenges of the regional economy. The GMC encourages employment development in job-poor localities through support of labor-force retraining programs and other economic development measures. Local jurisdictions and other service providers should enhance their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection. Implementing the proposed 1999 amendments is not expected to interfere with the goals of providing social, political and cultural equity.

In addition to the AQMP, the SCAQMD Governing Board has adopted, and the staff has implemented, a series of environmental justice initiatives that specifically address social inequities. The SCAQMD's environmental justice initiatives in conjunction with implementing the AQMP, which serves to improve air quality, further the GMC goals of social, political and cultural equity.

Consistency with Growth Management Chapter (GMC) to Improve the Regional Quality of Life

The growth management goals also include attaining mobility and clean air, and developing urban forms that enhance residents' quality of life to accommodate a diversity of life styles, preserve open space and natural resources that are aesthetically pleasing, preserve the character of communities, and enhance the regional strategic goal of maintaining the regional quality of life. The RCPG encourages planned development in locations least likely to cause environmental impacts, and supports the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals. While encouraging the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites, the GMC discourages development in areas with steep slopes, high fire, flood and seismic hazards, unless complying with special design requirements. Finally, the GMC encourages mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and

ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and develop emergency response and recovery plans. The proposed 1999 amendments achieve part of the regional quality of life goals by attaining and maintaining federal and state ambient air quality standards. Further, the proposed amended AQMP is not expected to interfere with attaining other regional quality of life goals.

Consistency with Regional Mobility Element (RMP) and Congestion Management Plan (CMP)

The proposed 1997 AQMP contains a number of mobile source control measures to reduce mobile source emissions. Some of these control measures, e.g., TCM-01 Transportation Improvements, ATT-01 Telecommunications, etc., have the potential to reduce traffic congestion through transportation improvements or reducing the number of vehicle trips per day. The proposed 1999 amendments do not affect existing mobile source control measures. While the proposed 1999 amendments may generate some traffic from construction activities and operation of control equipment, these effects were deemed not significant because this volume of additional annual traffic is negligible over the entire area of the district. Consequently, the proposed 1999 amendments to the AQMP are considered to be consistent with the RMP.

CHAPTER 4

ENVIRONMENTAL IMPACTS AND MITIGATION

INTRODUCTION

This chapter includes an analysis of potential adverse environmental impacts due to the amendments to the 1997 AQMP. The chapter is subdivided into the following sections based on area of potential impact: air quality, hazards, water resources, energy, and solid/hazardous waste. Included for each impact category is a discussion of project-specific impacts, project-specific mitigation (if necessary and available), impacts remaining after mitigation (if any), cumulative impacts, and cumulative impact mitigation (if necessary and available).

This analysis of potential adverse environmental impacts from the proposed 1999 amendments focuses only on those modifications being made to the 1997 AQMP. The proposed 1999 modifications evaluated herein include the following: 1) adding eight short-term new control measures; 2) revising the adoption and implementation schedule for 13 short-/intermediate-term stationary source VOC and NO_x control measures remaining in the 1997 AQMP; and 3) revising VOC emission budgets for some of the interim milestone years. Further analysis of existing control measures that are not being changed as part of the proposed 1999 amendments is not necessary as potential adverse impacts from these control measures were adequately analyzed in the 1997 AQMP EIR (SCH #96011062). The analysis of air quality impacts does, however, include an analysis of the overall effects of modifying the implementation schedule for the 13 short- and intermediate-term control measures.

GENERAL ASSUMPTIONS

In order to address the full range of potential environmental impacts the following assumptions were made for purposes of evaluation. General assumptions that apply to most of the environmental topics are identified below. Assumptions specific to a particular environmental topic are listed under that topic.

1. To provide a "worst-case" analysis, the environmental analysis contained herein assumes that the control measures contained in the AQMP apply to the entire district (i.e., the Basin and those portions of the MDAB and the SSAB under the SCAQMD's jurisdiction).

2. Three short- and intermediate-term control measures (CTS-02C(P2), CTS-08, and PRC-06) were developed to include portions of four long-term control measures, ADV-CLNG, ADV-CTS and ADV-PRC, from the 1997 AQMP. These modifications only move forward in time the implementation dates for controlling emissions from the applicable source categories. As a result, the fundamental requirements of the affected control measures have not changed. Thus, no additional environmental impacts would occur. Further, since both the short- and intermediate-

term control measures and the long-term control measures were previously analyzed in the 1997 AQMP EIR, no further analysis is required or necessary.

3. The remaining components of control measure ADV-ARCH have been reclassified as a short- and intermediate-term control measure, CTS-07(P3). In the 1997 AQMP, control measure ADV-ARCH would have been implemented between the years 2006 through 2010. Reclassifying ADV-ARCH as CTS-07(P3) would change the implementation time frame to the years 2006 through 2008. Although, this reclassification is not expected to alter the analysis of impacts for ADV-ARCH in the 1997 AQMP Final EIR, due to the long lead time prior to the initial implementation of control measure CTS-07(P3), analysis of any adverse environmental impacts would be purely speculative at this time.

4. In general, environmental impacts from AQMP control measures are comprised primarily of cross-media impacts resulting from installing air pollution control equipment. To provide an analysis of "worst-case" impacts for each environmental topic, staff analyzed adverse secondary environmental impacts from control equipment that would maximize the impact for that environmental topic. For example, analysis of thermal oxidizers provided a "worst-case" air quality analysis for control measure CTS-09. This approach was taken for each environmental topic even if the control technology was not necessarily the most appropriate technology or method of compliance. In practice, there are typically a number of ways to comply with the requirements of SCAQMD rules, but only a single type of control equipment will actually be installed. This approach has the potential to substantially overestimate impacts because only a single type of control equipment will be used that may not be appropriate for some applications.

5. It is assumed that control measure CTS-09 will target large coating and solvent operations, i.e., operations emitting approximately 25 tons per year or more. These facilities coat various substrates, such as wood, metal containers, automobiles, boats and aerospace products.

6. Based on SCAQMD Annual Emissions Reporting (AER) databases, 30 percent of the emissions from CTS-09 facilities are from unpermitted sources, i.e., hand-application (staining or touch-up and repair), flow coater or low-usage spray gun. It was assumed for this analysis that low VOC reformulated products would be used to control emissions from all unpermitted sources.

7. Based on SCAQMD AER databases and information provided by SCAQMD permit engineers, 70 percent of the emissions from CTS-09 facilities are from permitted sources, i.e., an enclosed or semi-enclosed spray booth environment, etc. A single facility could have multiple permitted emissions sources. For this analysis, permitted emissions sources at each affected were aggregated together by source specific rule regulating that emissions source. For example, all permitted source regulated by

Rule 1102 are grouped together, all permitted sources regulated by Rule 1104 are grouped together etc.

8. Permitted emissions sources grouped according to source specific rule were then evaluated to determine the most likely method of reducing emissions (e.g., either add-on control equipment or reformulation). Depending upon the coating operation and substrate being coated, it is assumed that emissions would be reduced from approximately 40 percent of these permitted emissions sources using add-on control equipment (thermal oxidizers) and emissions from 60 percent of these permitted sources would be reduced through the use of reformulated coatings or solvents. The percentage breakdown of permitted emissions sources per rule category where emissions are reduced through add-on control equipment or reformulation is provided in the following bullet points. Emissions from some permitted emission source rule categories are expected to be reduced using both add-on control equipment and reformulation. The estimated number of add-on control units for each source specific category of emissions sources is given in the spreadsheets in Appendix B.

9. It was assumed that only one add-on control unit would be needed to incinerate emissions from one or more permitted emission sources per source specific rule category at each affected facility.

10. The type of substrate coated (e.g., wood, metal, and plastics) in unpermitted coating applications is not readily available, so it was assumed that unpermitted source activities are similar to the other permitted coating activities at the facility. In order to estimate the gallons of coatings to be reformulated as a result of the control measure CTS-09, the general topcoat VOC content requirements for the applicable Regulation XI rules were reviewed. The lowest or "worst-case" general topcoat VOC content limit (225 grams per liter) was used in the calculation to estimate the amount of gallons to be reformulated.

11. It is assumed that control measure FUG-05 will target large fugitive VOC operations, i.e., operations emitting approximately 30 tons per year or more and specifically excludes operations targeted by control measure CTS-09. Facilities affected by control measure FUG-05 include refineries, oil/gas production, chemical plants, tank farms, manufacturing processes and coating/solvent operations. It is assumed that these facilities will reduce emissions through enhanced inspection and maintenance, as well as retrofitting valves, flanges and seals. Since facilities have the option to reduce fugitive VOC emissions from their coating/solvent operations, use of reformulated coatings is the most viable method because the coatings will primarily be applied in a non-spray booth process.

AIR QUALITY

The purpose of the 1997 AQMP and the proposed 1999 amendments is to establish a comprehensive program to attain national ambient air quality standards and attain as expeditiously as practical the state air quality standards through implementation of different categories of control measures. Short-term and intermediate-term measures are those measures that are proposed to be adopted by the year 2002 or 2003 using technological applications that are expected to be available for near-term implementation, existing statutory authority, and management practices. To achieve the emission reductions necessary to meet the state and federal ambient air quality standards, the 1997 AQMP also relies on advances in technology that are reasonably expected to be available between 2005 and 2010.

According to the modeling in the Final EIR for the 1997 AQMP, implementing all 1997 AQMP control measures is anticipated to bring the district into compliance with air quality standards for all pollutants, except for the state ozone and PM10 air quality standards, by the year 2010 (Table 4-1).

The SCAQMD is proposing to amend the 1997 Ozone SIP for the South Coast Basin to achieve greater VOC emission reductions in the near-term by adding eight new short-term control measures thereby accelerating implementation of portions of long-term control measures. This section evaluates potential adverse secondary air quality impacts that could result from implementing these control measures and revising the adoption and implementation schedule for 13 existing control measures. The benefits of the projects as a whole, far outweigh the secondary impacts associated with the project.

TABLE 4-1

Expected Year of Compliance with State and Federal Standards for Four Criteria Pollutants *
(South Coast Air Basin)

POLLUTANT	STANDARD	THRESHOLD CONCENTRATION LEVEL	EXPECTED COMPLIANCE YEAR
Ozone	NAAQS 1-hour	12 pphm	2010
	CAAQS 1-hour	9 pphm	beyond 2010
PM10	NAAQS Annual	50 ug/m^3	2006
	NAAQS 24-hour	150 ug/m^3	2006
	CAAQS Annual	30 ug/m^3	beyond 2010
	CAAQS 24-hour	50 ug/m^3	beyond 2010
CO	NAAQS 8-hour	9 ppm	2000
	NAAQS 1-hour	35 ppm	Achieved
	CAAQS 8-hour	9 ppm	2000
	CAAQS 1-hour	20 ppm	Achieved
NO_2	NAAQS Annual	5.34 pphm	Achieved
	CAAQS 1-hour	25 pphm	Achieved

* Aside from one incident in 1990, due to a major refinery breakdown, the district has been in attainment with the state SO_2 standards since 1984 with a single incident-related exceedance in 1990. The federal standard has not be violated since the 1960's.

Assumptions Used in the Air Quality Analysis

As explained in the "General Assumptions" section above, 30 percent of VOC emission from CTS-09 facilities are from unpermitted sources (i.e., hand-application to stain, or touch-up and repair, to flow coat or operate low-usage spray gun) and are expected to be reduced through reformulation of the coatings or solvents. Further, 70 percent of the VOC emissions from CTS-09 facilities are from permitted sources where VOC emissions could be reduced through either installing add-on control equipment or using reformulated products. The breakdown of the control method (either add-on control or reformulation) for permitted emissions sources is provided in the "General Assumptions" section. Additional assumptions to provide a "worst-case" air quality impacts analysis include the following.

1. Affected facilities were assumed to operate the control equipment (e.g., thermal oxidizers) at high-fired load for 10.8 hours per day, six days per week, and 52 weeks

per year. It was assumed that out of the facilities expected to install thermal oxidizers, 52 thermal oxidizer units in total, 10 percent would operate a thermal oxidizer 24 hrs /day, 15 percent would operate a thermal oxidizer 16 hrs/day, and 75 percent would operate a thermal oxidizer 8 hrs /day, the weighted average is 10.8 hours/day. Thus, as a "worst-case," the SCAQMD assumed that each thermal oxidizer for each rule the facility is subject to would operate 10.8 hrs/day. These parameters represent a "worst-case" scenario for several reasons. First, it overestimates the hours of high-fired load operation. During some hours of operation incinerators operate on low-fired load when VOC emissions are not being vented to the combustion chamber, which results in lower combustion emissions from the thermal oxidizer. Second, these "worst-case" parameters do not take into consideration time periods the thermal oxidizer is not in operation. Such periods could occur when: (1) coatings are being mixed prior to application; (2) coatings are being changed; (3) coated products are being moved from the application area; (4) coatings are not being applied in the application area; and (5) spraying equipment is being cleaned. Finally, not taken into consideration is the fact that hybrid technology has emerged that allows for the more efficient use of thermal oxidizers.

2. Average exhaust emission flow rates (in cubic feet per minute, cfm) for coating spray booth vented to thermal oxidizers were derived based upon the type of coating operation identified in the SCAQMD's AER database. (See Appendix B for cfm used for each type of coating operation).

3. Once the exhaust flow rates were established for each process, they were multiplied by the following: the criteria pollutant emission factors, the estimated number of affected facilities and the assumed operation schedule (see item #1 above). See Appendix B spreadsheets for calculation methodology.

4. Based on consultations with SCAQMD permit engineers, a percentage breakdown of control options (either thermal oxidizer or reformulation) was derived (see Appendix B) for each emissions source category type. Further, it was assumed facilities controlling emissions using a thermal incinerator would install one unit to control emissions for each source category. This means that all of the emissions from sources regulated by Rule 1102 would be vented to one thermal oxidizer, emissions from sources regulated by Rule 1104 would be vented to a second thermal oxidizer, etc.

Air Quality Significance Criteria

To determine whether or not air quality impacts from adopting and implementing the proposed 1999 amendments are significant, impacts will be evaluated and compared to the following criteria. If impacts exceed any of the following criteria, they will be considered significant. All feasible mitigation measures will be identified and

implemented to reduce significant impacts to the maximum extent feasible. The project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 4-2 are equaled or exceeded.

TABLE 4-2

Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants (TACs) Accidental Release of Acutely Hazardous Materials (AHMs)	MICR $\geq$ 10 in 1 million HI $\geq$ 1.0 (project increment) HI $\geq$ 5.0 (facility-wide) CAA §112(r) threshold quantities	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
NO_2 1-hour average annual average	 20 ug/m^3 (= 1.0 pphm) 1 ug/m^3 (= 0.05 pphm)	
PM10 24-hour annual geometric mean	 2.5 ug/m^3 1.0 ug/m^3	
Sulfate 24-hour average	 1 ug/m^3	
CO 1-hour average 8-hour average	 1.1 mg/m^3 (= 1.0 ppm) 0.50 mg/m^3 (= 0.45 ppm)	

MICR = maximum individual cancer risk; HI = Hazard Index; D/T = dilution to threshold factor; ug/m^3 = microgram per cubic meter; pphm = parts per hundred million; mg/m^3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant;

Direct Air Quality Impacts

Direct air quality impacts of adopting the proposed 1999 amendments would result from modifying the adoption and implementation dates of the short- and intermediate-term control measures. Table 4-3 identifies the existing and proposed implementation dates for each affected control measure.

TABLE 4-3

1999 Amendments to the 1997 AQMP Control Measures
With a Delayed or Expedited Implementation Schedule

		IMPLEMENTATION DATE (YEAR)	
CONTROL MEASURES	CONTROL MEASURE DESCRIPTION (POLLUTANT)	1997 AQMP	1999 AMENDMENTS
CMB-06	Emission Standards for New Commercial and Residential Water Heaters (Rule 1121) (NO_x)	2003-2013	2003
WST-01	Emission Reductions from Livestock Waste (Rule 1419) (VOC, PM10, Ammonia)	2004-2006	2004
WST-02	Emission Reductions from Composting (VOC, PM10, Ammonia)	2004-2006	2004-2006
WST-03	Emission Reductions from Waste Burning (Rule 444) (VOC)	1997-2010	TBD
WST-04	Emission Reductions from Disposal of Materials Containing Volatile Organic Compounds (VOC)	1998-2001	2002
PRC-03 (P2)	Emission Reductions from Restaurant Operations – Phase II (Rule 1138) (VOC, PM10)	2000-2004	2001-2003
FUG-03	Further Emission Reductions from Floating Roof Tanks (Rule 463) (VOC)	2000	TBD
FUG-04	Further Emission Reduction from Fugitive Sources (Rule 1173) (VOC)	1997	2003-2008
CTS-02-E	Further Emission Reductions from Adhesives (Rule 1168) (VOC)	2007-2010	2007-2008
CTS-02-O	Emission Reductions from Solvent Usage (Rule 442) (VOC)	2000-2005	2002
MSC-01*	Promotion of Lighter Color Roofing and Road Materials and Tree Planting Programs (All)	2000	TBD
MSC-03*	Promotion of Catalyst-Surface Coating Technology Programs (All)	2000-2004	TBD
FLX-01*	Intercredit Trading Program (All)	1997-1998	TBD

* - No emission reductions were assigned to these measures.

Modification of the implementation schedule may result in a delay or expedited emission reductions. In addition, six of the thirteen measures do not have estimated emission reductions, therefore, change in their adoption/implementation schedules do not affect anticipated future air quality improvement. Table 4-4 identifies the anticipated net VOC and NO_x emission reductions for both the existing 1997 AQMP and the proposed 1999 amendments. There is no change in anticipated NO_x emission reductions. For VOC emission reductions, the proposed 1999 amendments are expected to achieve greater emission reductions in the near term compared to the existing 1997 AQMP. Consequently, the proposed 1999 amendments provide an air quality benefit in the near term and, therefore, no additional analysis of revising the adoption and implementation schedule is necessary.

TABLE 4-4

Incremental Anticipated VOC and NO_x Emission Reductions from Implementing the Original 1997 AQMP and 1999 Amendments

		TOTAL ANTICIPATED EMISSION REDUCTIONS (TONS/DAY)					
		1999	**2002**	**2005**	**2006**	**2008**	**2010**
Original 1997 AQMP	VOC	3.6	5.5	12.3	31.1	64.6	99.1
	NO_x	0	0	2.6	3.6	5.5	7.6
1999 Amendments	VOC	15.7	31.1	48.1	62.4	85.5	99.4
	NO_x	0	0	2.6	3.6	5.5	7.6
INCREASE IN EMISSION REDUCTIONS	**VOC**	**12.1**	**25.6**	**35.8**	**31.3**	**20.9**	**0.3**
	NO_x	**0**	**0**	**0**	**0**	**0**	**0**

Indirect Air Quality Impacts

Table 4-5 lists 1997 AQMP control measures with potentially adverse secondary indirect air quality impacts. Specific construction and operational air quality impacts resulting from adoption and implementation of these control measures are described in the following subsections. New control measures FUG-06 and RFL-02(P2) were also evaluated for potential air quality impacts and none were identified.

Construction Air Quality Impacts

PROJECT SPECIFIC IMPACTS: The primary source of construction air quality impacts would be from those facilities installing add-on controls (thermal oxidizers). The type of construction-related activities attributable to facilities that would be installing thermal oxidizers would consist predominantly of modifications to, or construction of conveying, watering, and truck washing systems. These construction activities would not involve large-scale grading, slab pouring, or paving activities, that would be undertaken at typical land use projects such as housing developments, shopping centers, etc. Consequently NO_x, SOx, and PM10 emissions from these types of construction activities would not occur as a result of implementing the proposed project. For the purposes of this analysis, construction activities undertaken at affected facilities are anticipated to entail the use of portable equipment (e.g., generators and compressors) and hand held equipment by small construction crews to weld, cut, and grind metal structures.

TABLE 4-5

1999 Amendments to the 1997 AQMP Control Measures
That Have Potential Air Quality Impacts

CONTROL MEASURES	CONTROL MEASURE DESCRIPTION (POLLUTANT)	CONTROL METHODOLOGY	IMPACT
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources (VOC)	Reformulated low-VOC content coatings and solvents or use control equipment, such as thermal oxidizers.	Temporary construction emissions; secondary emissions from add-on controls; TACs from reformulated coatings
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources (VOC)	Use of incineration control equipment, such as thermal oxidizers, or retrofit seals, flanges or valves.	Temporary construction emissions; secondary emissions from add-on controls; TACs from reformulated coatings

To analyze the "worst-case" emissions from construction activities associated with the implementation of control measure CTS-09, the SCAQMD assumed that 52 thermal oxidizers would be installed at affected facilities. Furthermore, the SCAQMD assumed that the maximum daily emissions from construction-related activities would all occur on the same day. Table 4-6 presents the results of the SCAQMD's analysis. The reader is referred to Appendix B of this document for the spreadsheets that contain the results and assumptions used by the SCAQMD for this analysis.

As shown in Table 4-6, the construction-related activities for the proposed 1999 amendments result in no significant adverse air quality impacts.

It should be noted that the analysis of construction air quality impacts was a "worst-case" analysis because it assumes that all facilities would perform construction activities at the same time for the same duration. There are a number of factors that would preclude concurrent construction activities including: availability of construction crews, type and size of thermal oxidizers to be constructed, engineering time necessary to plan and design the thermal oxidizers, permitting constraints, etc. Furthermore, as a "worst-case," the SCAQMD's air quality impacts analysis assumes that construction could take up to three months to complete. Depending on the type and size of the thermal oxidizers to be constructed, actual construction time could be substantially less than three months. Further, some affected facilities could reduce emissions through methods other than installing thermal oxidizers, thus, eliminating construction impacts at those facilities. Finally, once construction is complete, construction air quality impacts would cease, while the VOC reductions associated with the implementation of control measures CTS-09 and NO_x reductions associated with the full implementation of the 1997 AQMP would be permanent.

TABLE 4-6

Summary of CTS-09 Construction Emissions

Peak Construction Activity	CO (lbs/day)	VOC (lbs/day)	NO_x (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)
Onsite Emissions*	51	9	83	9	5
Offsite Emissions**	30	7	12	0	1
Total Offsite and Onsite	**81**	**17**	**95**	**9**	**6**
SIGNIFICANCE THRESHOLD	550	75	100	150	150
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**

* Construction Activities

** Worker Commute

PROJECT-SPECIFIC MITIGATION: None required.

CUMULATIVE IMPACTS: CEQA requires that the analyses of cumulative impacts include reasonably anticipated past, present, and future projects producing related or cumulative impacts, including those projects that would be outside the control of the SCAQMD (CEQA Guidelines §15130). In the context of short-term construction-related activities, the SCAQMD cannot speculate on whether or not other construction

projects may occur in the vicinity of the affected facilities at the same time, therefore, contributing to the project-specific construction impacts of the proposed 1999 amendments. As shown in Table 4-6 NO_x emissions from construction equipment is the main pollutant of concern relative to construction activities associated with the proposed 1999 amendments. However, control measures in the 1997 AQMP are expected to reduce NO_x emissions by approximately 7.6 tons per day by the year 2010. Even with NO_x emission increases from construction activities related to the proposed 1999 amendments, the 1997 AQMP will generate a net reduction in district-wide NO_x emissions. Therefore, cumulative construction-related air quality impacts generated by the proposed 1999 amendments are considered not significant

CUMULATIVE IMPACT MITIGATION: Cumulative construction-related air quality impacts are considered to be not significant. Therefore, cumulative impact mitigation measures are not required.

Operational Emissions

Secondary Impacts from Increased Electricity Demand

PROJECT-SPECIFIC IMPACTS: Electricity is often used as the power source to operate various components of add-on control equipment, such as ventilation systems, fan motors, vapor recovery systems, etc. Increased demand for electrical energy may require generation of additional electricity, which in turn could result in increased indirect emissions of criteria pollutants in the district.

Increased electricity demand is not expected to create significant adverse air quality impacts in the district. Only if demand exceeds available power would new electricity sources be required. Even then in-district power generation is subject to applicable SCAQMD rules such as Rule 1135 - Emissions of Oxides of Nitrogen From Electric Power Generating Systems, SCAQMD Rule 1134 - Emissions of Oxides of Nitrogen From Stationary Gas Turbines, and the NO_x RECLAIM program. Rule 1135 and RECLAIM establish absolute mass caps on the allowable NO_x emissions from electric generating facilities. As a result, NO_x emissions from electric generating facilities have already been accounted for in previously prepared CEQA documents and will not increase above established NO_x emissions caps, regardless of increased power demand from the operation of add-on control equipment. No significant adverse impacts to air quality are expected from control measures that increase electricity demand.

PROJECT-SPECIFIC MITIGATION: None required.

Secondary Impacts from Coating Operations

PROJECT-SPECIFIC IMPACT: As already noted, it is assumed that coatings operations affected by control measure CTS-09 will reduce VOC emissions by

reformulation and/or installing add-on control equipment. To maximize air quality impacts, it was assumed that for each type of coating/solvent operation, add-on control equipment would consist of thermal oxidizers, as these generate the highest emissions compared to other types of oxidizers or other types of control technologies. Thermal oxidizers destroy VOC emissions, but the process produces secondary criteria pollutants, such as CO, NO_x, VOC, SO_X, and PM10.

To estimate criteria pollutant emissions from thermal oxidizers, the SCAQMD used general default emission factors. Currently, SCAQMD permitting staff requires that thermal oxidizers less than two million british thermal units (MMbtu) per hour to meet a NO_x concentration of 30 part per million as BACT. This translates to an emission factor of 36 pounds per million cubic feet (MMcf). For thermal oxidizers less than 2.0 MMbtu per hour, the SCAQMD permitting staff uses the Annual Emissions Reporting (AER) default emission factor of 130 pounds per MMcf (SCAQMD 1998-1999 AER Program). For CO, VOC, PM10, and SOx, the SCAQMD permitting staff uses the AER default emission factors for all sizes of thermal oxidizers.

Based on SCAQMD's AER database, 52 facilities were identified as having the potential to use control equipment to reduce emissions as required by control measure CTS-09. Table 4-7 shows total criteria pollutant emissions generated by these coating/solvent operations anticipated to install thermal oxidizers to reduce VOC emissions. Table 4-7 shows that secondary criteria pollutant emissions would not exceed the SCAQMD's significance thresholds.

TABLE 4-7

Estimated Operational Emissions from Thermal Oxidizers (pounds per day)

	CRITERIA POLLUTANTS				
CONTROL MEASURE	**CO**	**VOC**	**NO_x**	**SOx**	**PM10**
CTS-09 (52 units)	**40**	**8**	**54**	**1**	**9**
SIGNIFICANCE THRESHOLD	550	55	55	150	150
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**

See Appendix B for the emissions impact calculations.

Secondary Impacts from Fugitive VOC Sources

PROJECT-SPECIFIC IMPACTS: Control measure FUG-05 also targets fugitive VOC emission reductions from refineries, oil/gas and tank operations. Fugitive VOC emissions are generated by valves, flanges, seals, tanks, etc. It is anticipated that

affected facilities will reduce emissions through enhanced inspection and maintenance, as well as retrofitting valves, flanges and seals. Replacement would most likely be required to occur as part of the facility's regular maintenance program. Retrofitting and enhanced inspection and maintenance activities will not result in significant adverse air quality impacts.

PROJECT-SPECIFIC MITIGATION: Since project-specific impacts are considered not significant, no mitigation is required.

REMAINING IMPACTS: None.

CUMULATIVE IMPACTS: As demonstrated in the project-specific analysis, some secondary air quality impacts are expected to occur as a result of implementing the proposed 1999 amendments. However, the overall emissions reductions expected to occur as a result of implementing the proposed 1999 amendments, the 1997 AQMP, and existing rules with future compliance dates far outweigh any potential secondary adverse cumulative air quality impacts that may occur. As a result, cumulative air quality impacts from the proposed amendments are considered to be not significant.

CUMULATIVE IMPACT MITIGATION: Since cumulative air quality impacts are not significant, no mitigation measures are required.

Toxic Air Contaminants

PROJECT-SPECIFIC IMPACTS: As noted in the "General Assumptions" section above, it is assumed that unpermitted coatings operations at facilities subject to control measures CTS-09 and FUG-05 will reduce VOC emissions by using low VOC reformulated products. Though these control measures do not dictate any particular product formulation, implementation of the control measures may result in the use of coatings with toxic constituents.

Since there are many different product manufacturers and coating formulations, as well as many different coating applications, the specific chemical composition of reformulated coating products is not known. Consequently, the analysis of exposure to toxic air contaminants from reformulated products is based on trends observed for recently amended coatings rules, e.g., Rule 1113 – Architectural Coatings, Rule 1171 – Solvent Cleaning Operations. The following analysis of exposure to toxic air contaminants compares the relative toxicity of current coating formulations with possible future compliant formulations.

Current and Possible Future Solvent Constituents of Coating Formulations

The following bullet points identify solvents common to current coating formulations, as well as those replacement solvents used to formulated low VOC products assumed to be used to reduce emissions from unpermitted coating and solvents sources as set forth in control measures FUG-05 and CTS-09.

Conventional Solvents

- toluene
- xylene
- methyl alcohol
- Stoddard solvent

Conventional Solvents (concluded)

- methyl ethyl ketone
- isopropyl alcohol
- ethylene glycol monobutyl ether (EGBE)
- ethylene glycol monomethyl ether (EGME)
- ethylene glycol monoethyl ether (EGEE)
- ethyl alcohol

Possible Replacement Solvents

- acetone
- 2,2,4-Trimethyl-1, 3-pentanediol Monoisobutyrate (Texanol)
- methylene chloride
- methyl acetate
- n-butyl acetate
- t-butyl acetate
- isobutyl acetate
- ethylene glycol
- propylene glycol
- di-propylene glycol
- 1,1,1-trichloroethane
- toulene diisocyanate (TDI)
- methylene bisphenyl diisocyanate (MDI)
- hexamethylene diisocyanate (HDI)
- parachlorobenzotrifluoride (PCBTF)

Information On and Comparison of the Toxicity of Current and Possible Future Solvent Constituents of Coating Formulations

The potential for significant exposure to adverse toxic impacts is dependent on a number of variables. These include the specific chemical composition of the coating materials used to meet the requirements of the amendments, the amounts that are used, and the chemical composition of the materials to be replaced (i.e., coating materials formulated with conventional solvents also may contain toxic or otherwise hazardous air pollutants). Previous analyses of the potential toxic impacts from the use of reformulated solvent products have determined that the toxicity of conventional solvent replacements is generally offset by the toxicity of the solvents that they would replace.

A compilation of toxicological information of representative conventional solvents and their possible replacements is given below. This information was extracted from the following sources: Agency for Toxic Substances and Disease Registry ToxFAQs; New Jersey's Department of Health, Right to Know Program's Hazardous Substance Fact Sheets; EPA's Integrated Risk Information System; EPA's Chemicals In the Environment: OPPT Chemical Fact Sheets; NISOH Pocket Guide to Chemical Hazards; NIOSH Documentation for Immediately Dangerous to Life or Health Concentrations; OSHA Health Guidelines; and Department of Health and Human Services National Toxicology Program Chemical Repository.

Conventional Coating Solvents

TOLUENE: The largest use for toluene is in the production of benzene. Toluene is also used as an octane booster or enhancer in gasoline, as a raw material for toluene diisocyanate, as a solvent, and in solvent extraction processes. As a solvent, it may be used in aerosol spray paints, wall paints, lacquers, inks, adhesives, natural gums, and resins, as well as in a number of consumer products, such as spot removers, paint strippers, cosmetics, perfumes, and antifreezes.

Breathing large amounts of toluene for short periods of time adversely affects the human nervous system, the kidneys, the liver, and the heart. Effects range from unsteadiness and tingling in fingers and toes to unconsciousness and death. Direct, prolonged contact with toluene liquid or vapor irritates the skin and the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of toluene over long periods of time are not known. Repeatedly breathing large amounts of toluene, such as when "sniffing" glue or paint, can cause permanent brain damage. As a result, humans can develop problems with speech, hearing, and vision. Humans can also experience loss of muscle control, loss of memory, and decreased mental ability. Exposure to toluene can also adversely affect the kidneys. Laboratory animal studies and, in some cases, human exposure studies show that repeat exposure to large amounts of toluene during pregnancy can adversely affect the developing fetus. Other studies show that

repeat exposure to large amounts of toluene adversely affects the nervous system, the kidneys, and the liver of animals.

The Clean Air Act Amendments of 1990 list toluene as a hazardous air pollutant. Toluene is also listed in Table I[3] of SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants, and Table II[4] of SCAQMD Rule 1402 – Control of Toxic Air Contaminants from Existing Sources.

XYLENE: Xylene occurs naturally in petroleum and coal tar and is formed during forest fires. Chemical industries produce xylene from petroleum. It is one of the top 30 chemicals produced in the United States in terms of volume.

Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a coating agent, paint thinner, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

Xylene adversely affects the brain. High levels of exposure for short periods (14 days or less) or long periods (more than 1 year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of people to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. It is unknown if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy.

The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans. Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer.

The Clean Air Act Amendments of 1990 list xylene as a hazardous air pollutant. Because xylene can cause adverse health affects other than cancer, it is listed in Table I of SCAQMD Rule 1401 and Tables II and III[5] of SCAQMD Rule 1402.

METHYL ALCOHOL: Methyl alcohol, also known as methanol and wood alcohol, is a colorless liquid that occurs naturally in wood and in volcanic gases. Methanol is also a

[3] Rule 1401, Table 1 - Toxic Air Contaminants
[4] Rule 1402, Table II - Toxic Air Contaminants to be Evaluated for Chronic Hazard Index
[5] Rule 1402, Table II - Toxic Air Contaminants to be Evaluated for Acute Hazard Index

product of decaying organic material. It is produced in large amounts in the United States (approximately 1.3 billion gallons in 1992). The largest users of the methanol sold in the US are companies that make methyl t-butyl ether, a gasoline additive. Companies also use methanol to make chemicals such as formaldehyde, acetic acid, chloromethanes, and methyl methacrylate. Methanol is a component of paint strippers, aerosol spray paints, wall paints, carburetor cleaners, and car windshield washer products. Methanol is also a gasoline additive and, in some cases, a gasoline substitute for use in automobiles and other small engines. Exposure to methanol can occur in the workplace or in the environment following releases to air, water, land, or groundwater. Exposure can occur when people use certain paint strippers, aerosol spray paints, wall paints, windshield wiper fluid, and small engine fuel. Methanol enters the body when breathed in with contaminated air or when consumed with contaminated food or water. It can also be absorbed through skin contact. It does not remain in the body due to its breakdown and removal in expired air or urine.

Effects of methanol on human health and the environment depend on how much methanol is present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs. People have died as a result of drinking large amounts of methanol. Drinking smaller, non-lethal amounts of methanol adversely affects the human nervous system. Effects range from headaches to in coordination similar to that associated with drunkenness. Delayed effects such as severe abdominal, leg, and back pain can follow the inebriation effects of methanol. Loss of vision and even blindness can also occur after exposure to amounts of methanol causing inebriation. These effects are not likely to occur at levels of methanol that are normally found in the environment. Human health effects associated with breathing or otherwise consuming smaller amounts of methanol over long periods of time are not known. Workers repeatedly exposed to methanol have experienced several adverse effects. Effects range from headaches to sleep disorders and gastrointestinal problems to optic nerve damage. Laboratory studies show that repeat exposure to large amounts of methanol in air or in drinking water cause similar adverse effects in animals. Methanol can contribute to the formation of photochemical smog when it reacts with other volatile organic carbon substances in air.

The Clean Air Act Amendments of 1990 list methanol as a hazardous air pollutant. Methanol is listed in Table I of SCAQMD Rule 1401 and Table II of SCAQMD Rule 1402.

STODDARD SOLVENT: Stoddard solvent is a colorless, flammable liquid that smells and tastes like kerosene. It will turn into a vapor at temperatures of 150-200°C. Stoddard solvent is a petroleum mixture that is also known as dry cleaning safety solvent, petroleum solvent, and varnoline. It is a chemical mixture that is similar to white spirits. Stoddard solvent is used as paint thinner; in some types of photocopier

toners, printing inks, and adhesives; as a dry cleaning solvent; and as a general cleaner and degreaser.

Most of the information on the health effects of Stoddard solvent comes from studies in which it is inhaled; there are fewer studies of exposure to the eyes or skin. Exposure to Stoddard solvent in the air can affect the nervous system and cause dizziness, headaches, or a prolonged reaction time. It can also cause eye, skin, or throat irritation. Rats, cats, and dogs that breathed in large amounts of Stoddard solvent for several hours suffered seizures. Breathing Stoddard solvent has caused bronchitis in guinea pigs, but neither seizures nor bronchitis has been reported when humans inhaled it. The effects of swallowing Stoddard solvent are not known. It is not known whether Stoddard solvent can cause birth defects or affect reproduction.

Very few studies have been located that study the carcinogenic effects of Stoddard solvent in humans or animals, and the International Agency for Research on Cancer (IARC) has determined that Stoddard solvent is not classifiable as to its carcinogenicity to humans.

METHYL ETHYL KETONE: The primary use of methyl ethyl ketone (MEK), accounting for over 60 percent of all use, is as a solvent in protective coatings. It is also used as a solvent in adhesives, printing inks, paint removers, and other coating products; in the production of magnetic tapes; and in dewaxing lubricating oil. MEK is used as a chemical intermediate in several reactions, including condensation; halogenation; ammonolysis; and oxidation. Small amounts of methyl ethyl ketone are also used as a sterilizer for instruments, hypodermic needles, syringes, and dental instruments; as an extraction solvent for hardwood pulping and vegetable oil; and as a solvent in pharmaceutical and cosmetic production.

Breathing MEK for short periods of time, such as when painting in a poorly vented area, can adversely affect the nervous system. Effects range from headaches, dizziness, nausea, and numbness in fingers and toes to unconsciousness. MEK vapor irritates the eyes, the nose, and the throat. Direct, prolonged contact with liquid methyl ethyl ketone irritates the skin and damages the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of methyl ethyl ketone over long periods of time are not known. Workers have developed dermatitis, upset stomachs, loss of appetite, headaches, dizziness, and weakness as a result of repeated exposure to MEK. Laboratory studies show that exposure to large amounts of MEK in air causes animals to give birth to smaller offspring. Studies also show that repeat exposure to large amounts of MEK in air causes adverse liver and kidney effects in animals.

The 1990 Clean Air Act Amendments list methyl ethyl ketone as a hazardous air pollutant. MEK is also listed in Table I of SCAQMD Rule 1401.

ISOPROPYL ALCOHOL: Isopropyl alcohol is used as a solvent and in making many commercial products. Isopropyl alcohol is an irritant of the eyes and mucous membranes. By analogy with effects seen in animals, it may cause central nervous system depression in humans at very high concentrations. Exposure to 400 ppm isopropyl alcohol for three to five minutes resulted in mild irritation of the eyes, nose, and throat; at 800 ppm, these symptoms were intensified. An oral dose of 25 milliliters (ml) in 100 ml of water produced hypotension, facial flushing, bradycardia, and dizziness. A postmortem examination in a case of massive ingestion revealed extensive hemorrhagic tracheobronchitis, bronchopneumonia, and hemorrhagic pulmonary edema. Prolonged skin contact with isopropyl alcohol caused eczema and sensitivity. Delayed dermal absorption is attributed to a number of pediatric poisonings that have occurred following repeated or prolonged sponge bathing with isopropyl alcohol to reduce fever. In several cases symptoms included respiratory distress, stupor, and coma. Epidemiological studies suggested an association between isopropyl alcohol and paranasal sinus cancer; however, subsequent analysis suggests that the "strong-acid" process used to manufacture isopropyl alcohol may be responsible for these cancers. The International Agency for Research on Cancer has concluded that the evidence for the carcinogenicity of this process is adequate but that the evidence for isopropyl alcohol itself is inadequate.

Isopropyl alcohol is listed in Tables I and II of SCAQMD Rule 1401.

GLYCOL ETHERS: Ethylene oxide-based glycol ethers are made by reacting ethylene oxide with different alcohols. The most widely produced glycol ether is ethylene glycol monobutyl ether (EGBE). For more than 50 years, EGBE has been a key ingredient in products ranging from industrial and consumer coating compounds to water- and solvent-based coatings. Recent concern relative to the toxicological effects of exposure to EGBE has resulted in scientific and regulatory attention. Concern is based on early studies that revealed significant adverse health effects in laboratory animals exposed to ethylene glycol methyl ether (EGME) and ethylene glycol ethyl ether (EGEE). The studies of these compounds found serious health effects ranging from damage to bone marrow and the male reproductive system to impaired fetal development and birth defects. Subsequent research on EGBE, including studies performed by the National Toxicology Program of the National Institute of Environmental Health Sciences, showed no evidence of adverse effects to bone marrow, reproduction, or fetal development. Studies also showed no observable effects from inhalation, dermal contact, and ingestion of specific amounts of EGBE by laboratory animals. At extremely high levels, however, EGBE exposure in laboratory animals has been found to reduce body weight and food consumption and to cause skin irritation and red blood cell breakage (hemolysis). All these effects were reversible, ending shortly after exposures terminated. Based on these tests, further studies of EGBE, including the use of human volunteers, were conducted to examine the potential for hemolysis of human blood cells.

The studies appear to confirm that humans are comparatively resistant to hemolysis at levels clearly hemolytic for susceptible species.

Glycol ethers are listed in Table I of SCAQMD Rule 1401 and Tables II and III of SCAQMD Rule 1402.

Possible Solvent Replacements

ACETONE: Acetone is a manufactured chemical that is also found naturally in the environment. It occurs naturally in plants, trees, volcanic gases, forest fires, and as a product of the breakdown of body fat. It is present in vehicle exhaust, tobacco smoke, and landfill sites. Acetone is used to make plastic, fibers, drugs, and other chemicals. It is also used to dissolve other substances. Industrial processes contribute more acetone to the environment than natural processes.

Acetone is absorbed into the bloodstream and carried to all the organs in the body. If it is a small amount, the liver breaks it down to chemicals that are not harmful and uses these chemicals to make energy for normal body functions. Breathing moderate-to-high levels of acetone for short periods of time, however, can cause nose, throat, lung, and eye irritation; headaches; light-headedness; confusion; increased pulse rate; effects on blood; nausea; vomiting; unconsciousness and possibly coma; and shortening of the menstrual cycle in women.

Swallowing very high levels of acetone can result in unconsciousness and damage to the skin in the mouth. Skin contact can result in irritation and damage to your skin.

Health effects from long-term exposures are known mostly from animal studies. Kidney, liver, and nerve damage, increased birth defects, and lowered ability to reproduce (males only) occurred in animals exposed long-term. It is not known if people would have these same effects. California does not list acetone as a reproductive toxicant under Proposition 65.

The Department of Health and Human Services, the International Agency for Research on Cancer, and the EPA have not classified acetone for carcinogenicity. Acetone does not cause skin cancer in animals when applied to the skin. It is unknown, however, if breathing or swallowing acetone for long periods will cause cancer. Studies of workers exposed to it found no significant risk of death from cancer.

Acetone has not been identified by the CARB as a toxic air contaminant (TAC) under AB 1807, but is listed in Category 3 (substances which are being evaluated for entry into Category 2) on the TAC Identification List. Acetone is also included in the list of "Substances for which emissions must be quantified" under AB 2588 Air Toxics "Hot Spots" Program. The 1990 Clean Air Act Amendments do not list acetone as a hazardous air pollutant.

2,2,4-TRIMETHYL-1, 3-PENTANEDIOL MONOISOBUTYRATE (TEXANOL): Texanol is a slow evaporating, water-insoluble coalescing aid for latex paints. It provides good performance characteristics, such as scrub resistance, color development, and package stability in paints. It is an excellent coalescing aid for emulsion polymers and has excellent hydrolytic stability, allowing it to be used with a wide variety of latex emulsions including high pH acrylics. When added to an emulsion paint, Texanol is absorbed by the emulsion's polymeric particles, softening them and causing complete fusion when the paint film dries.

The potential effect of exposure to Texanol is set forth in the toxicological information provided by the manufacturer. This compound poses a low hazard for exposure to eyes, skin, or by inhalation or ingestion. The compound is not regulated by relevant transportation organizations (i.e., the Department of Transportation, the International Civil Aviation Organization, the International Maritime Dangerous Goods). It is not listed by the following organizations or programs: Occupational Safety and Hazard Administration, California Proposition 65, International Agency for Research on Cancer, American Conference of Governmental Industrial Hygienists, National Toxicological Program, or Superfund Amendments and Title III of the Reauthorization Act. The product is listed on the US Toxic Substances Control Act inventory.

METHYLENE CHLORIDE: Methylene chloride is a colorless liquid with a mild, sweet odor. Another name for it is dichloromethane. It does not occur naturally in the environment. It is made from methane gas or wood alcohol. It is widely used as a solvent in paint strippers, as a propellant in aerosols, and as a process solvent in the manufacturing of drugs. It is also used as a metal cleaning and finishing solvent and as an extraction solvent for spices and hops. It used to be popular for removing caffeine from coffee, but most coffee producers no longer use it. Most methylene chloride gets in the environment from its use in industry and from home use of aerosols and paint removers. Because of concern over the health effects, its use in aerosols has declined.

Methylene chloride harms the human central nervous system. High levels in the air (nearly 1,000 times average levels) may affect your ability to react fast, remain steady, or perform tasks that require precise hand movements. If you continue to breathe high levels, you may experience dizziness, nausea, tingling, or numbness in the fingers and toes.

In most cases, these effects will stop shortly after exposure ends. In animals, however, very high exposures have caused unconsciousness and death. Exposure to lower levels of methylene chloride in air can lead to slightly impaired hearing and vision. Many people can smell methylene chloride at these lower levels. However, people differ in their ability to smell methylene chloride, so odors may not help in avoiding unwanted exposures.

In humans, direct skin contact with methylene chloride causes intense burning and mild redness of the skin. Direct contact with the eyes can burn the cornea. In animals that have been exposed to vapors or directly to methylene chloride, the cornea was damaged. The damage healed within a few days after the exposure ended.

The Department of Health and Human Services (DHHS) has determined that methylene chloride may reasonably be anticipated to be a carcinogen. Methylene chloride has not been shown to cause cancer in humans exposed to vapors in the workplace. However, breathing high concentrations of it for long periods did increase the incidence of cancer in mice.

The Clean Air Act Amendments of 1990 list methylene chloride as a hazardous air pollutant. Methylene chloride is listed in Table I of SCAQMD Rule 1401 and Tables I, II, and III of SCAQMD Rule 1402.

METHYL ACETATE: Methyl acetate is not listed as a hazardous air pollutant under the Clean Air Act Amendments, nor is it listed as a toxic chemical under Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986. Any organic compound has some toxicity, however, which is the case for methyl acetate. California EPA's Office of Environmental Health Hazard Assessment has determined methyl acetate to: be an eye and mucous membrane irritant, cause unconsciousness in animals at high doses, and metabolize to methanol which can be a reproductive system toxicant at low doses.

ETHYLENE GLYCOL and PROPYLENE GLYCOL: Both ethylene glycol and propylene glycol are clear, colorless, slightly viscous liquids at room temperature. Either compound may exist in air in the vapor form, although propylene glycol must be heated or briskly shaken to produce a vapor. Ethylene glycol is odorless but has a sweet taste. Propylene glycol is practically odorless and tasteless. Both compounds are used to make antifreeze and de-icing solutions for cars, airplanes, and boats; to make polyester compounds; and as solvents in the paint and plastics industries. Ethylene glycol is also an ingredient in photographic developing solutions, hydraulic brake fluids and in inks used in stamp pads, ballpoint pens, and print shops.

The Food and Drug Administration (FDA) has classified propylene glycol as an additive that is "generally recognized as safe" for use in food. It is used to absorb extra water and maintain moisture in certain medicines, cosmetics, or food products. It is a solvent for food colors and flavors. Propylene glycol is also used to create artificial smoke or fog used in fire-fighting training and in theatrical productions.

Eating or drinking very large amounts of ethylene glycol can result in death, while large amounts can result in nausea, convulsions, slurred speech, disorientation, and heart and kidney problems. In addition, ethylene glycol affects the body's chemistry by increasing the amount of acid, resulting in metabolic problems.

Female animals that ate large amounts of ethylene glycol had babies with birth defects, while male animals had reduced sperm counts. However, these effects were seen at very high levels and would not be expected in people exposed to lower levels at hazardous waste sites.

Similar to ethylene glycol, propylene glycol increases the amount of acid in the body. However, large amounts of propylene glycol are needed to cause this effect.

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified ethylene glycol and propylene glycol for carcinogenicity. Studies with people who used ethylene glycol did not show carcinogenic effects. Animal studies also have not shown these chemicals to be carcinogens.

Propylene glycol is generally considered to be a safe chemical, and is not routinely tested for, unless specific exposure, such as to a medicine or cosmetic, can be linked with symptoms. Since both chemicals break down very quickly in the body, they are very difficult to detect, even though symptoms may be present.

1,1,1-TRICHLOROETHANE: 1,1,1-Trichloroethane is a colorless liquid with a sharp, sweet odor. Even though it is usually found as a liquid, it evaporates quickly and becomes a vapor. It is also known as methyl chloroform, methyltrichloromethane, and trichloromethylmethane.

1,1,1-Trichloroethane does not occur naturally in the environment. It is found in many common products such as glue, paint, industrial degreasers, and aerosol sprays. Production of 1,1,1-trichloroethane in the United States was stopped in 1996 due to its adverse effects on the ozone layer.

Breathing air containing high levels of 1,1,1-trichloroethane for a short time may cause dizziness, light-headedness, or loss of balance. These symptoms disappear when breathing contaminated air is stopped. Breathing much higher levels may cause unconsciousness, low blood pressure, and loss of heartbeat. The effects of breathing 1,1,1-trichloroethane for a long time are not known. In animals such as rats and dogs, exposure to high levels damages the breathing passages, affects the nervous system, and causes mild effects on the liver.

After pregnant rats or rabbits were exposed to 1,1,1-trichloroethane, effects on the offspring, such as delayed development and changes in the setting of the bone structure, were usually only seen at levels that were toxic to the mother. It isn't known whether this chemical affects human reproduction or development.

There are no studies in people to tell whether harmful health effects occur from eating food or drinking water contaminated with 1,1,1-trichloroethane. Placing large amounts

of it in an animal's stomach has caused effects on the nervous system, mild liver damage, unconsciousness, and even death.

Skin contact with 1,1,1-trichloroethane might cause some irritation. Studies in animals have shown that skin contact may affect the liver and very large amounts may cause death.

No information is available to show that 1,1,1-trichloroethane causes cancer. The International Agency for Research on Cancer (IARC) has determined that 1,1,1-trichloroethane is not classifiable as to its human carcinogenicity.

The Clean Air Act Amendments of 1990 list 1,1,1-trichloroethane as a hazardous air pollutant. 1,1,1-Trichloroethane is listed in Table I of SCAQMD Rule 1401 and Tables II and III of SCAQMD Rule 1402.

DIISOCYANATES: Diisocyanates, including TDI, HDI, and MDI, are low-molecular-weight aromatic and aliphatic compounds. These compounds are widely used to manufacture flexible and rigid foams, fibers, coatings, and elastomers. These compounds are increasingly used in the automobile industry, autobody repair, and building insulation materials. The major route of occupational exposure to diisocyanates is inhalation of the vapor or aerosol; exposure may also occur through skin contact during the handling of liquid diisocyanates. Occupational exposure could potentially occur during the mixing and application of two-component coatings containing diisocyanates.

Diisocyanates are powerful irritants to the mucous membranes of the eyes and gastrointestinal and respiratory tracts. Direct skin contact with diisocyanates can also cause marked inflammation. Respiratory irritation may progress to a chemical bronchitis with severe bronchospasm.

After one or more exposures, diisocyanates can also sensitize workers, making them subject to severe asthma attacks if they are exposed again--even at concentrations below the NIOSH REL. Death from severe asthma in sensitized subjects has been reported. Additionally, sporadic cases of hypersensitivity pneumonitis (HP) have also been reported in workers exposed to diisocyanates. Individuals with acute HP typically develop symptoms four to six hours after exposure.

The Clean Air Act Amendments of 1990 list TDI as a hazardous air pollutant. TDI is listed in Table I of SCAQMD Rule 1401 and Table II of SCAQMD Rule 1402.

PARACHLOROBENZOTRIFLUORIDE (PCBTF): Though PCBTF has been commercially produced since the early 1960's toxicity data on this compound is less complete than other possible replacement solvents. PCBTF had originally been used as

an intermediate in the production of other compounds, but more recently has been marketed as a coating solvent. Available toxicity information is presented below.

PCBTF is slightly irritating to the eyes and barely irritating to the skin. Uses of PCBTF include industrial solvent coating, aerosols, adhesives, coatings, and inks. Under these applications, the major routes of exposure are considered to be through the skin and by inhalation. The estimated rat oral LD50 is greater than 6.8 grams per kilogram (g/kg); the acute dermal toxicity (LD50) value is greater than 2.7 g/kg in rabbits. The acute inhalation toxicity LD50 is 4,479 ppm.

PCBTF is not absorbed into the body to any appreciable extent. Most of the material is either exhaled back or excreted. Even the very small quantities that are assimilated are converted to non-toxic water soluble products and excreted. Only at very high concentration levels (>250 ppm) of prolonged exposures (>90 days) of PCBTF was slight liver damage observed. Animal studies indicate that PCBTF is not a reproductive toxin.

Neither the California Air Pollution Control Officers Association, nor the U.S. EPA has developed non-cancer health standards for acute or chronic exposures to PCBTF. The State of California has not listed PCBTF as a reproductive toxin under Proposition 65. Neither International Agency for Research on Cancer nor the U.S. EPA has classified PCBTF for carcinogenicity. PCBTF is not listed on the State of California under Proposition 65 as a carcinogen and has not been identified by the CARB as a TAC under AB 1807. PCBTF is not listed under AB 2588 Air Toxics "Hot Spots" Program or as a hazardous air pollutant under the 1990 Clean Air Act Amendments.

During the 1998 rule amendment process for SCAQMD Rule 1151, auto refinishers expressed concern about the potential negative health effects of compliant coatings formulated with PCBTF. As such, the California Autobody Association (CAA) requested the California Department of Health Services to conduct an independent study of this issue. Will Forest, an Associate Toxicologist with the Hazard Evaluation System and Information Service, Department of Health Services/Department of Industrial Relations, responded by letter to the CAA. In his response, Mr. Forest noted that while PCBTF is not a harmless chemical, there was no reason to believe that it was substantially more harmful than materials it might replace. The following are pertinent excerpts from the letter:

> "There is no PEL for PCBTF. In fact there are PELs for only about 650 of the many thousands chemicals in commercial use ..."

> "The acute toxicity of PCBTF through ingestion, inhalation, or dermal contact is very low ..."

> "... rat studies ... indicated that PCBTF is mostly breathed out "rapidly" (time not stated), without being metabolized. About 15 percent was excreted in urine, essentially unchanged. About 3-4 percent was excreted in feces, unmetabolized. Four days after dousing, only 1 percent remained in the animal's bodies, mostly in body fat."
>
> "... I see no reason to expect that PCBTF would need to be handled [in the waste stream] differently from the substances that it replaces.
>
> "All in all, I can find no information to suggest that PCBTF would be any more hazardous than most of the substances it is intended to replace.

Based on this and other relevant information pertaining to the 1998 proposed amendments to Rule 1151, the analysis concluded that the use of PCBTF in certain coating formulations would not result in significant air quality/human health impacts. No information was presented to the SCAQMD that refutes this conclusion.

Comparison of the Toxicity of Current and Possible Future Solvent Constituents of Coating Formulations

In addition to the preceding discussions, staff compared the toxicity of commonly used solvents to those expected to be used in reformulated compliant coating products. Using the exposure values set by a variety of government agencies, staff compared the Threshold Limit Values (TLVs) established by the American Conference of Governmental Industrial Hygiene (ACGIH), the Permissible Exposure Limits (PELs) adopted by the Occupational Safety and Health (OSHA), and the Immediately Dangerous to Life and Health (IDLH) levels recommended by the National Institute for Occupational Safety and Health (NIOSH).

As illustrated in Table 4-8, many of the replacement solvents have higher or less severe TLVs, PELs, and IDLHs than traditional solvents. For example, acetone would be considered less toxic than most of the listed traditional solvents.

Although diisocyanates habe a low TLV, it is not expected to create significant impacts for the following reasons. The SCAQMD investigated diisocyanates as part of a previous rule making effort. This investigation, which includes discussions with resin manufacturers, coating formulators, and coating applicators, as well as the review of various health-related studies, reveals that the primary route of diisocyanate exposure to the public would be through the spraying of low- or zero-VOC two component industrial maintenance (IM) systems. Controlled laboratory monitoring by Mobay[6] while mixing a two-component system containing HDI showed non-detectable air concentrations of HDI. Furthermore, field monitoring of hand brushing and rolling application of a single

[6] Mobay is now Bayer.

component system containing HDI conducted by CalTrans showed that HDI concentrations were not detectable. Additionally, field monitoring studies conducted by Mobay during the brushing and rolling of one component IM topcoats (one system containing HDI and the other containing MDI), as well as the spraying of a two-component IM system containing HDI, revealed that HDI and MDI concentrations were well below HDI and MDI thresholds recommended by ACGIH and OSHA. Therefore, mixing and hand brushing or rolling of the compliant one or two component systems appears not to release diisocyanates such that the general public would suffer acute significant adverse toxic air contaminant impacts.

TABLE 4-8

Toxicity of Coating Solvents

Conventional Solvents				
Solvents	**TLV (ACGIH) (ppm)**	**PEL (OSHA) (ppm)**	**STEL (ACGIH) (ppm)**	**IDLH (NIOSH) (ppm)**
Toluene	50	200	300	500
Xylene	100	100	150	900
MEK	200	200	300	3,000
Stoddard Solvent	100	500	Not Available	3,400
Ethyl Alcohol	1000	1000	Not Available	3,300*
Methyl Alcohol	200	200	250	6,00
Isopropyl Alcohol	400	400		2,000
EGBE	25	50	Not Available	700
EGEE	5	200	Not Available	500
EGME	5	25	Not Available	200
Replacement Solvents				
Acetone	500	1000	750	2,500*
Texanol	Not Established	Not Established	Not Established	Not Established
Di-Propylene Glycol	Not Established	Not Established	Not Established	Not Established
Propylene Glycol	50[1]	Not Established	Not Established	Not Established
Ethylene Glycol	50	50	Not Available	Not Established
PCBTF	25[2]	Not Established	Not Established	Not Established
1,1,1-trichloroethane	350	350	450	700

TABLE 4-8 (CONCLUDED)

Toxicity of Coating Solvents

Replacement Solvents				
Methylene Chloride	50	25	Not Available	2,300
n-Butyl Acetate	150	150	200	1,700*
t-Butyl Acetate	200	200	Not Available	1,500*
Isobutyl Acetate	150	150	187	1,300*
Methyl Acetate	200	200	250	3,100*
TDI	0.005	0.02	0.02	2.5
HDI	0.005	Not Established	Not Established	Not Established
MDI	0.005	0.02	0.02	7

Sources: [1] AIHA Workplace Environmental Exposure Level
[2] Manufacturer's Recommendation
* Based on 10 percent of the lower explosive limit

In conclusion, potential TAC emissions generated by the proposed project are not expected to be significant for the following reasons. There is no substantive evidence that shows the use of reformulated coatings would result in significant adverse toxic air contaminant impacts. The replacement solvents that may be used in reformulated coatings are for the most part common chemicals used in a wide variety of industrial and even consumer applications. Their widespread use is assumed to be indicative of the ability to use these compounds in a safe manner. As shown by the comparison above, current coating formulations contain materials that, in general, are as toxic or more toxic than formulations expected to be used to comply with the proposed amendments. Thus, any possible increase in the use of toxics in reformulated cleaners will generally be balanced by a concurrent decrease in the use of toxic materials in conventional coating formulations. As a result, toxic air contaminant impacts would not be expected to change substantially from existing conditions. Further, many coating operations occur primarily in industrial settings where sufficient safety equipment and procedures are in place to prevent significant exposures. As discussed throughout this document, control measures FUG-5 and CTS-09 would only regulate a limited number of facilities. Finally, fugitive VOC emission reduction would directly result in proportional reductions in toxic exposure.

PROJECT-SPECIFIC MITIGATION: None required.

REMAINING IMPACTS: None.

CUMULATIVE IMPACTS OF TOXIC AIR CONTAMINANTS: As discussed previously, potential TAC emissions as a result of the proposed project are not expected to be significant. As discussed above, current coating formulations contain materials that are as toxic or more toxic than formulations expected to be used to comply with the proposed amendments. Thus, the possible increased use of toxics in reformulated cleaners will generally be balanced by a concurrent decrease in the use of toxic materials in currently used cleaners, and toxic air contaminant impacts would not be expected to change significantly from existing conditions.

CUMULATIVE IMPACT MITIGATION FOR TOXIC AIR CONTAMINANTS: None required.

Odor Impacts

PROJECT-SPECIFIC IMPACTS: Due the recent de-listing of some solvents as non-reactive VOCs as well as the emergence of less hazardous and less toxic coalescing solvents, it is likely that these solvents will be used to reformulate coatings to comply with ever technically achievable lower-VOC content limits. Although some of these replacement solvents, such as acetone, have strong odors, their conventional solvent counterparts also have strong odors. Local governments can protect the public from adverse odors from new businesses or sensitive receptors through land use decisions. Historically, the SCAQMD has enforced odor nuisance complaints through SCAQMD Rule 402 - Nuisance.

Individuals can differ quite markedly from the population average in their sensitivity to odor, due to a variety of innate, chronic or acute physiological conditions. This includes olfactory adaptation or smell fatigue (i.e., continuing exposure to an odor usually results in a gradual diminution or even disappearance of the smell sensation). Table 4-9 lists the odor thresholds for some common coating solvents. This information was obtained from the MSDS for each coating solvent. Table 4-9 illustrates the fact that using replacements for other traditional solvents may actually result in less odor impacts compared to currently used solvents.

TABLE 4-9

Comparison of Odor Thresholds for Some Common Coating Solvents

Solvent	Threshold (PPM[1])
Conventional Solvents	
Toluene	2.9
Xylene	0.081-40
MEK	5.4
Stoddard Solvent	1-30
Ethyl Alcohol	84
Methyl Alcohol	100
EGBE	0.1
EGEE	2.7
EGME	2.3
Replacement Solvents	
Acetone	63
Texanol	None Provided by Mfgr
Propylene Glycol	Odorless[2]
Ethylene Glycol	Odorless[2]
PBTCF	0.1[3]
1,1,1-trichloroethane	390
Dichloromethane	160
n-Butyl Acetate	0.063-7.4
t-Butyl Acetate	Fruity[4]
Isobutyl Acetate	1.1
Methyl Acetate	4.6
Diissocyanates TDI HDI MDI	 0.17 Odorless[2] Odorless[2]

Sources: [1] New Jersey Department of Health, http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm#T
[2] MallincKrodt Baker, Inc., http://www.jtbaker.com/msds/
[3] OxyChem Specialty Business Group
[4] OSHA, http://www.osha-slc.gov/ChemSamp_data/

FUG-05, PRC-06, RFL-02 and FUG-06 will reduce odors when VOC emissions are reduced by controlling leaks, etc. No significant additional odor impacts are expected to result from the use of acetone or other solvents in reformulating coatings.

PROJECT-SPECIFIC MITIGATION MEASURES: None required.

REMAINING IMPACTS: Since odor impacts are not significant, no adverse impacts remain.

CUMULATIVE IMPACTS: The SCAQMD has examined a number of recently amended coating rules to determine potential significant cumulative odor impacts including odors. No significant additional odor impacts are expected to result from implementing the proposed 1999 amendments, and no significant cumulative adverse odor impacts are anticipated. This determination is consistent with the 1997 AQMP Final Program EIR which concluded that implementing all AQMP control measures would not generate significant adverse cumulative odor impacts.

CUMULATIVE IMPACT MITIGATION: None required.

HAZARDS

Hazard impacts are typically related to the risks of explosions or the release of hazardous substances in the event of an accident or upset conditions. Based upon analyses prepared for recently amended coatings rules, the only hazard impact identified was related to the use of low VOC coatings formulated with acetone. Consistent with the assumptions identified in the "General Assumptions" discussion, it is assumed that 30 percent of the facilities affected by CTS-09 will reduce VOC emissions through using low VOC reformulated coatings. Further, it is assumed that eight percent of the facilities affected by FUG-05 will reduce VOC emissions through using low VOC reformulated coatings. New control measures FUG-06 and RFL-02 (P2) were also evaluated for potential hazard impacts and none were identified. Table 4-10 identifies control measures that may have potential hazard impacts.

TABLE 4-10

Control Measures with Potential Hazard Impacts

CONTROL MEASURES	CONTROL MEASURE DESCRIPTION (POLLUTANT)	CONTROL METHODOLOGY[a]	IMPACT
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources (VOC)	Reformulated low-VOC content coatings and solvents for some applications.	Potential increased fire or explosion hazards from greater use of low VOC coatings formulated with acetone.
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources (VOC)	Reformulated low-VOC content coatings and solvents for some applications.	Potential increased fire or explosion hazards from greater use of low VOC coatings formulated with acetone.

Hazard Significance Criteria

Hazard impacts will be considered significant if any of the following criteria are met:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- Impair implementation of or physically interfere with an adopted emergency response of emergency evacuation plan.

Potential Hazard Impacts and Mitigation

PROJECT-SPECIFIC IMPACTS: It is possible that facilities reducing VOC emissions by using low VOC coatings formulated with acetone. Because acetone has a low flash point and high flammability rating, potential fire or explosion hazards could occur. To provide a "worst-case" analysis, it is assumed that all coating materials at affected facilities would be reformulated with acetone because, as shown in Table 4-11, no other replacement solvent formulations were identified that have a lower flash point or higher flammability rating.

As a result of being delisted as a VOC in recent years by the U.S. EPA, CARB, and many air districts, acetone usage has been steadily increasing irrespective of the proposed 1999 amendments. In any event, it is likely that acetone usage as a solvent in compliant coatings could increase as a result of the proposed 1999 amendments. An increase in acetone usage may increase the number of trucks or rail cars that transport acetone within the state. However, the safety characteristics of individual trucks or rail cars that transport acetone will not be affected by the proposed amendments. The consequences (exposure effects) of an accidental release of acetone are directly proportional to the size of the individual transport trucks or rail cars and the release rate. Although the probability of an accidental release of acetone could increase, the severity of an incident involving acetone transport will not change as a result of the proposed project. This holds true for the transport of other replacement solvents.

Any increase in accidental releases of compliant acetone-based coating materials during transport would be expected to result in a concurrent reduction in the number of accidental releases of existing coating materials. Many conventional coating solvents are as flammable as acetone, so there would generally be little or no net change in the hazard consequences from accidental releases of reformulated coating materials compared to conventional coatings.

Similarly, the storage or use of acetone at facilities subject to control measures FUG-05 and CTS-09 would not be expected to generate significant adverse hazard impacts. As shown in Table 4-11, flammability classifications by the National Fire Protection Association (NFPA) are the same for acetone, methyl acetate, toluene, xylene, and MEK. Recognizing that acetone has the lowest flash point, it still has nearly the highest lower explosive limit. Acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 13,000 ppm; the concentration of xylene vapors that could cause an explosion is even lower at 10,000 ppm.

Existing emergency planning is anticipated to further minimize the risks associated with substituting exempt compounds and aqueous materials for conventional solvents. Businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against potential hazard impacts.

The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment.

TABLE 4-11

Chemical Characteristics for Common Coating Solvents

Chemical Compound	M.W. [a]	Boiling Point (@760 mmHg, °F)	Evap. Rate (@25 °C)	Flash point (°F)	LEL/UEL [b] (% by Vol.)	Autoignition Temperature (°C)	Vapor Pressure (mmHg @ 20 °C)	Flammability Classification [c] (NFPA) [d]
Conventional Solvents								
Toluene	92	111	2.0	41	1.2/7	538	22	3
Xylene	106	139	0.8	81	1.0/6.6	499	6	3
MEK	72	80	4.0	25	1.8/11.5	474	8.7	3
Stoddard Solvent	144	154-188	0.1	109-113	1/7	232	1.1	2
Ethyl Alcohol	46	78	2.3	56	3.3/19	435	44	3
Methyl Alcohol	32	64.5	4.6	54	6/36	470	96	3
EGBE	118	340	0.07	144	1.1/12.7	460	0.8	2
EGEE	90	275	0.3	109	1.7/15.7	235	3.8	2
EGME	76	255	1.0	102	1.8/14	547	6.2	2
Replacement Solvents								
Acetone	58	56	6.1	-4	2.6/12.8	538	180	3
Texanol	62	471	0.002	248	0.6/4.2	393	0.01	1
Propylene Glycol	76	187	0.01	225	2.6/12.5	415	0.07	1
Ethylene Glycol	227	197	0.01	244	3.2/15.3	412	0.06	1
PCBTF	181	282	0.9	109	0.9/10.5	97	5.3	1
1,1,1-TCA	133	74	6.0	None	8/10.5	485	104.5	1
Methylene Chloride	85	104	27.5	79	12/23	556	350	1
n-Butyl Acetate	112	126	1.0	81	1.7/7.6	407	8.7	3
t-Butyl Acetate	113	208	No Info	59	1.5/No Info	No Info	No Info	3
Isobutyl Acetate	116	241	No Info	70	1.3/10.5	421	14	3
Methyl Acetate	74	56	5.3	15	3/16	501	171	3
TDI	174	482	No Info	261	0.9/9.5	620	10	1
HDI	168	491	No Info	284	0.9/9.5	454	0.05	1
MDI	250	342	No Info	396	0.9/9.5	454	0.05	1

Source: OxyChem Specialty Business Group

[a] Molecular weight

[b] Lower explosive limit/upper explosive limit

[c] Flammability Rating: 0 = Not Combustible; 1 = Combustible if heated; 2 = Caution: Combustible liquid flash point of 100° to 200°F; 3 = Warning: Flammable liquid flash point below 100°F; 4 = Danger: Flammable gas or extremely flammable liquid

[d] NFPA = National Fire Protection Association

The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations.

It is anticipated that the current regulatory requirements regarding flammable and otherwise hazardous materials will not need to be amended as a result of the proposed project since, in part, acetone is already widely used and conventional solvents are as flammable or more flammable than acetone.

In conclusion, potential hazard impacts resulting from adopting and implementing the proposed 1999 amendments are not expected to be significant for the following reasons. Coating operations are typically performed in industrial settings that already store and use hazardous materials, including currently used coating formulations. Thus, the increased usage of acetone or other hazardous materials as a result of implementing the project will generally be balanced by reduced usage of other equally or more hazardous materials such as MEK, toluene, xylene, etc. Additionally, many low VOC coatings are expected to rely on aqueous formulations, which typically contain less or non-hazardous materials compared to conventional coating products, a net benefit. Further, emergency contingency plans that are already in place are expected to minimize potential hazard impacts posed by any increased use of acetone or in future low VOC coating materials. Businesses are required to report increases in the storage of flammable and otherwise hazardous materials to local fire departments to ensure that adequate conditions are in place to protect against hazard impacts. OSHA regulations coupled with standard operating procedures, including safe handling practices, minimize worker exposure to hazardous material during coating operations.

PROJECT-SPECIFIC MITIGATION: None required.

REMAINING IMPACTS: None.

CUMULATIVE IMPACTS: The 1997 AQMP EIR concluded that potential hazard impacts from reformulated coatings may be cumulatively significant, primarily due to increased use of acetone. As relevant control measures were subsequently promulgated into rules, further analysis of reformulated coatings and solvents provided information that indicates these products would not result in significant adverse cumulative hazard impacts. As discussed above, the increased usage of acetone or other hazardous materials as a result of implementing the amended AQMP will generally be balanced by reduced usage of other equally or more hazardous materials such as MEK, toluene, xylene, etc. Further, emergency contingency plans that are already in place are expected to minimize potential hazard impacts posed by any increased use of acetone or other hazardous materials in future compliant coating materials. Therefore, the proposed 1997 AQMP amendment is not expected to result in significant adverse cumulative hazard impacts.

CUMULATIVE IMPACT MITIGATION: None required.

WATER RESOURCES

It is envisioned that facilities with coating operations that are subject to control measures CTS-09 and FUG-05 (Table 4-15) will reduce VOC emissions by using low-VOC waterborne and solvent coating formulations. Consistent with the "General Assumptions" discussion, it is assumed that 30 percent of the emissions sources (unpermitted sources) at facilities subject to control measure CTS-09 and eight percent of the emissions sources (unpermitted sources) at facilities with coating operations subject to control measure FUG-05 will reduce VOC emission by using low VOC reformulated products. New control measures FUG-06 and RFL-02 (P2) were also evaluated for potential water resource impacts and none were identified.

The use of these low-VOC waterborne coating and solvent formulations could generate water resource impacts in two ways: 1) additional water demand from the manufacturing and clean up of low-VOC waterborne coatings and 2) potential additional generation of wastewater that could be disposed of into storm drains and sanitary sewers.

TABLE 4-12

Control Measures with Potential Water Resources Impacts

CONTROL MEASURES	CONTROL MEASURE DESCRIPTION (POLLUTANT)	CONTROL METHODOLOGY[a]	IMPACT
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources (VOC)	Reformulated low-VOC content coatings and solvents for some applications.	Potential increased generation of wastewater and water demand for cleanup
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources (VOC)	Reformulated low-VOC content coatings and solvents for some applications.	Potential increased generation of wastewater and water demand for cleanup

Significance Criteria

The project will be considered to have significant adverse water demand impacts if any one of the following criteria is met by the project:

- The project increases demand for water by more than 5,000,000 gallons per day.
- The project requires construction of new water conveyance infrastructure.

The project will be considered to have significant adverse water quality impacts if any one of the following criteria is met by the project:

- The project creates a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The project results in a substantial degradation of surface water or groundwater quality.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Water Demand Impacts

PROJECT SPECIFIC IMPACTS: To analyze water demand impacts resulting from increased usage of coatings and solvents reformulated with waterborne technology, SCAQMD staff estimated the volume of increased water demand expected to occur as a result of using water-based solvents to manufacture low VOC coatings, as well as the volumes of water needed to clean coating equipment such as brushes, spray guns, rollers, pans, etc.

Additional "worst-case" assumptions besides the number of facilities expected to use reformulated products (see "General Assumptions" section) include the following. SCAQMD staff assumed for this "worst-case" analysis that all coatings used by affected facilities in the district would be manufactured in the district. Additionally, staff assumed that all cleanup materials to clean coating equipment (e.g., sprayers, rollers, or brushes) would be waterborne instead of solvent-borne materials. These assumptions maximize the estimate of the volumes of water used in conjunction with the manufacture of waterborne coatings and the clean-up practices associated with the use of waterborne coatings than is presently the practice. As shown in Table 4-13, water demand impacts associated with the manufacture and clean-up of waterborne coating and solvent formulations are anticipated to create a negligible incremental water demand impact and will not exceed the SCAQMD's significant threshold of 5,000,000 gallons per day.

Table 4-13 shows that it is within the capacity of the local water purveyors to supply the small incremental increase in water demand associated with control measures CTS-09 and FUG-05. Therefore, no significant water demand impacts are expected as the result of implementing the proposed 1999 amendments.

It should also be noted that water providers throughout the state are currently exploring various strategies for increasing water supplies and maximizing the use of existing supplies. Options include increasing storage capacity, acquiring additional supplies of water from existing sources such as unused water allocations to other states or agricultural agencies, and advance delivery of water to irrigation districts. These

continuing and future water management programs help to assure that the area's full-service water demands will be met at all times.

TABLE 4-13

Projected Water Demand for Reformulated Coatings

Year	Projected Population[a] (millions of people)	Projected Water Demand[b] (bgy)	Projected Water Supply[c] (bgy)	Projected Coating Usage[d] (mgy)	Projected Mfgr Demand[e] (mgy)	Projected Cleanup Demand[f] (mgy)	Total CM Demand[g] (mgy)	Total Impacts[h] (% Increase)	Total Impacts[I] (mgd))
1999	15.29	1,171.28	1,266.97	8.00	0.00	0.00	0.00	0.0000	0.00
2000	15.58	1,192.24	1,266.97	8.64	8.64	8.64	17.27	0.0014	0.05
2001	15.88	1,213.20	1,266.97	9.33	9.33	9.33	18.65	0.0015	0.05
2002	16.17	1,234.16	1,266.97	10.07	10.07	10.07	20.14	0.0016	0.06
2003	16.46	1,255.12	1,266.97	10.88	10.88	10.88	21.76	0.0017	0.06
2004	16.75	1,276.08	1,266.97	11.75	11.75	11.75	23.50	0.0019	0.06
2005	17.04	1,297.04	1,526.97	12.69	12.69	12.69	25.38	0.0017	0.07
2006	17.34	1,318.00	1,526.97	13.70	13.70	13.70	27.41	0.0018	0.08
2007	17.63	1,338.96	1,526.97	14.80	14.80	14.80	29.60	0.0019	0.08
2008	17.92	1,359.92	1,526.97	15.98	15.98	15.98	31.97	0.0021	0.09
2009	18.21	1,380.88	1,526.97	17.26	17.26	17.26	34.52	0.0023	0.09
2010	18.50	1,401.80	1,526.97	18.64	18.64	18.64	37.29	0.0024	0.10

[a] Population projections obtained from SCAG's 1998 RTP.

[b] Water demand and supply projections obtained from MWD Web Page. MWD Fact Sheet, http://www.mwd.dst.ca.us/docs/fctsheet.htm. As a "worst-case" all of MWD's service area water demand is included.

[c] Assumes MWD provides 60 percent of water supply in the SCAQMD's jurisdiction. Other water districts or municipalities provide the remaining 40 percent. MWD 1996 baseline figure obtained from MWD's Fact Sheet. Includes 1.3 million acre-feet per year (AF/yr) from the Colorado River, 784,000 AF/yr from State Water Project, 244,412 AF/yr for Reservoirs, 178,000 AF from recycling programs, 30,000 from water reclamation, and the construction of a 797,546 AF reservoir by 2005. AF (acre- feet) equals approximately 326,000 gallons

[d] SCAQMD AER data for the years 1996-1997 was used to estimate projected coating and solvent usage from affected facilities. It is projected that coating and solvent usage will increase by 8 percent per year. Reference The Coatings Agenda America 1995/1996 articles entitled "Demand Led by Do-It-Yourselfers" and "Holding on in the Face of a Blizzard."

[e] Assumes that one gallon of water will be used to manufacture one gallon of coating applied. Also assumes as a "worst-case" scenario, that all coatings used in the SCAQMD's jurisdiction were manufactured here.

[f] Assumes that one gallon of water will be used to clean-up equipment for every gallon of coating applied. Also assumes as a "worst-case" scenario, that full conversion of affected coating categories to waterborne formulations occurs in 2002.

[g] Total amount of manufacturer and clean-up water demand duet to the implementation of control measures CTS-09 and FUG-05.

[h] The percentage increase in water demand as a result of the incremental increase due to water clean-up of waterborne coating material.

[i] The incremental increase in daily water usage associated with the implementation of control measures CTS-09 and FUG-05.

Acronyms:bgy = billion gallons per year; mgy = millions of gallons per year; mgd = million gallons per day

PROJECT-SPECIFIC MITIGATION: None required.

REMAINING IMPACTS: None. Even if twice as many facilities used reformulated low VOC coating or solvent materials as assumed in this analysis, water demand impacts from the proposed 1999 amendments would not be considered significant because the increased demand from twice as many facilities would still constitute a small percentage of the total future water demand in the district.

CUMULATIVE IMPACTS: Cumulative water demand impacts from the implementation of control measures CTS-09 and FUG-05 are not considered to be cumulatively considerable as defined by CEQA Guidelines §15065(c) for the following reason. Although implementing these control measures is expected to incrementally increase water demand in the district, this increased demand does not generate a significant adverse water demand impact because it does not exceed any water resources thresholds of significance. This incremental effect is not considered to be cumulatively considerable. This conclusion is consistent with CEQA Guidelines §15130(a), which states in part, "Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable."

Furthermore, the cumulative impacts from the implementation of control measures CTS-09 and FUG-05 is consistent with the conclusions reached in the Final 1997 AQMP Program EIR (SCH #96011062). The 1997 AQMP Final Program EIR concluded that the implementation of all control measures would not create cumulatively significant adverse water demand impacts.

CUMULATIVE IMPACT MITIGATION: None required.

Water Quality Impacts

Groundwater and Surface Water Impacts

PROJECT-SPECIFIC IMPACT: Increased usage of low VOC waterborne technologies by affected facilities to comply with the emission reduction requirements of control measures CTS-09 and FUG-05 has the potential to generate groundwater impacts. Groundwater impacts could occur as a result of waste material generated from the use of low-VOC waterborne formulations being illegally dumped on the ground and percolating to water-bearing formations. Similarly, surface water impacts could occur from waste material generated from the use of low-VOC waterborne formulations being illegally dumped into storm drains that flow to interconnected bodies of water. There is, however, substantial evidence that improper disposal of low VOC coatings will not occur, as described in the following paragraphs.

First, there are a number of local, state, and federal laws that specifically prohibit illegal disposal of waste materials. Second, there numerous public outreach programs targeting the reduction of waste material entering ground water, sewer systems, and storm drainage systems (e.g., the public information bulletins and commercials alerting the public of the consequences of dumping liquid wastes down storm drains).

To support the 1996 amendments to Rule 1113 – Architectural Coatings, SCAQMD staff conducted over 60 unannounced site visits at industrial parks and new housing construction sites in an effort to evaluate coating and cleanup practices. During these site visits, SCAQMD staff surveyed contractors regarding their thinning practices, coating application techniques, and clean-up practices. Out of 32 responses received from the contractors on their clean-up practices, seven (22 percent) indicated that they currently dump their waste material into the ground, 18 (56 percent) indicated that they use a disposal company to handle waste material, and seven (22 percent) indicated that they recycle their waste material as thinner. This survey demonstrates that a majority of the paint contractors either dispose of the waste material properly as required by the coating manufacturer's MSDS and applicable laws or they recycle the waste material regardless of type of coating. Based upon these results, it is not likely that operators of facilities subject to control measures CTS-09 and FUG-05 will change their current disposal practices, especially because these facilities typically have more stringent state and federal disposal requirements than paint contractors.

Other coating research conducted by SCAQMD reveals that compliant low-VOC, two-component systems containing diisocyanate compounds (e.g., TDI, HDI, MDI, etc.) may also be used by affected facilities in complying with the emission reduction targets established by control measures CTS-09 and FUG-05. As noted in the "Hazards" section, exposure to diisocyanates can cause allergic reactions (primarily asthmatic) in sensitive individuals. It is likely that compliant waterborne two-component systems may replace higher-VOC solvent-borne one-component systems. These waterborne compliant formulations are also likely replacements for their higher-VOC solvent-borne two component counterparts currently in use. However, users of these compliant coating systems are business (e.g., painting contractors) that are more sophisticated and experienced than the average consumer in the proper disposal methods and applicable disposal requirements. Furthermore, after the two coating components are mixed together and once they exceed their pot life, they become a solid mass and are disposed of as a solid waste rather than as wastewater. Thus, it is unlikely that these users will improperly dispose of these compliant coating systems such that adverse water quality impacts will occur.

As a result of research conducted for other recent SCAQMD rule making efforts (e.g., 1106, 1106.1, 1107, 1113, 1122, 1130, 1130.1, 1136, 1171, etc.), SCAQMD staff has identified a trend by coating and solvent formulators of replacing conventional VOC coating and solvent formulations containing materials such as toluene, xylene, mineral

spirits, acetone, MEK, tricholorethylene, and percholoroethylene with either exempt solvents (e.g., acetone, PCBTF, t-butyl acetate-when formally delisted) or waterborne formulations. In addition to the above-mentioned VOC compounds, solvents such as texanol, propylene glycol, and ethylene glycol are being used more widely in low-VOC waterborne formulations as alternatives to low VOC solvents such as EGBE, EGEE, EGME, and their acetates, which have higher toxicity. Staff has verified this trend toward less toxic formulations by reviewing hundreds of product data sheets and MSDSs for currently available low-VOC waterborne formulations.

Even if it is assumed that those facilities that currently recycle their waste coatings will instead illegally dump them, significant adverse surface and/or groundwater impacts are not anticipated from the implementation of control measures CTS-09 and FUG-05. As shown in Table 4-14, replacement solvents have comparable ecological effects as conventional solvents. Therefore, the use of replacement solvents in complaint low-VOC reformulations will not create incrementally significant adverse groundwater or surface water impacts over and above the existing effects associated with the use of conventional solvents.

Thus, significant ground water and surface water quality impacts are not expected from the use of texanol, propylene glycol, and ethylene glycol as replacement solvents in compliant waterborne coatings. Furthermore, the potential for significant adverse groundwater and surface water quality impacts from compliant IM coatings containing diisocyanates is considered unlikely since users will properly dispose of any waste generated from application of these coatings.

Finally, as part of the 1997 amendments to Rule 1171 – Solvent Cleaning Operations, the SCAQMD committed to working with sanitation districts to monitor the disposal of waste materials associated with the use of low-VOC waterborne cleaning solvents. To date, monitoring and sampling of industrial wastewater streams reveals no appreciable increase of waste materials generated from the use of low-VOC waterborne solvents. These monitoring results also support the conclusion that affected facilities' current lawful disposal practices are not expected to change as a result of implementing control measures CTS-09 and FUG-05.

Water Quality Impacts to Publicly Owned Treatment Works (POTWs)

PROJECT-SPECIFIC IMPACT: Water quality impacts to POTWs could occur as a result of wastewater material generated from the use of low-VOC waterborne formulations. For example, more water will be used for clean up and the resultant wastewater material could be disposed of into the public sanitary sewer system. Thus, the increased usage of waterborne low-VOC formulations could adversely affect local POTWs' ability to handle the projected incremental increase in waste material.

TABLE 4-14

Ecological Information for Coating Solvents

Characteristic	CONVENTIONAL SOLVENTS								
	Toluene	Xylene	MEK	Stoddard Solvent	Ethyl Alcohol	Methyl Alcohol	EGBE	EGEE	EGME
Solubility in Water (@ 20 °C)	500 ppm	130 ppm	27%	Insoluble	100%	100%	Miscible	Miscible	Miscible
Vapor Pressure (@ 20 °C)	22 mmHg	6 mmHg	85 mmHg	1.1 mmHg	44 mmHg	96 mmHg	0.6 mmHg	3.8 mmHg	6.2 mmHg
Environmental Fate (Released into the Water) Evaporation Biodegradable Bioacumulation	Moderately	Moderately	Moderately Moderately Moderately	Not Available	Not Available	Significantly Moderately	Slightly Moderately Slightly	Slightly Moderately Slightly	Moderately Slightly
Environmental Fate (Released into the Soil) Evaporation Biodegradable Ground Water Leaching	Moderately Moderately Expected	Moderately Moderately Expected	Expected	Not Available	Not Available	Significantly Significantly Expected	Significantly Moderately Expected	Moderately Moderately Expected	Moderately Expected
Environmental Toxicity	Toxic to Aquatic Life	Toxic to Aquatic Life	Not Toxic to Aquatic Life	Not Available	Not Available	Slightly Toxic to Aquatic Life	Not Toxic to Aquatic Life	Not Toxic to Aquatic Life	Not Toxic to Aquatic Life
LC50/96 Hour Value for Fish	10 – 100 mg/l	10 – 100 mg/l	>100 mg/l	Not Available	Not Available	Not Available	>100 mg/l	>100 mg/l	>100 mg/l
Bioconcentration Factor (eels)	13.2	1.3	Not Available	Not Available	Not Available	Not Available	<100	Not Available	Not Available

TABLE 4-14 (CONCLUDED)

Ecological Information for Coating Solvents

Characteristic	REPLACEMENT SOLVENTS									
	Acetone	Texanol	Propylene Glycol	Ethylene Glycol	PCBTF	1,1,1-TCA	Methylene Chloride	n-Butyl Acetate	Methyl Acetate	TDI
Solubility in Water (@ 20 °C)	100%	0.1%	100%	100%	29 ppm	700 ppm	1.3%	0.7%	7.3%	Decomposes
Vapor Pressure (@ 20 °C)	180 mmHg	0.01 mmHg	0.07 mmHg	0.06 mmHg	5.3 mmHg	104 mmHg	350 mmHg	8.7 mmHg	171 mmHg	0.04 mmHg
Environmental Fate (Released into the Water)		Not Available			Not Available					
Evaporation	Significantly					Significantly	Significantly	Significantly	Significantly	
Biodegradble	Significantly		Significantly	Significantly			Moderately	Significantly		Slightly
Bioacumulation	Slightly			Slightly		Slightly	Slightly	Slightly	Significantly	
Environmental Fate (Released into the Soil)		Not Available			Not Available					Not Available
Evaporation	Significantly			Slightly		Significantly	Significantly	Significantly	Significantly	
Biodegradable	Significantly		Significantly	Significantly		Slightly		Significantly	Moderately	
Ground Water Leaching	Expected		Expected	Expected		Expected	Expected	Expected	Expected	
Environmental Toxicity	Toxic to Aquatic Life	Not Available	Not Available	Not Available	Not Available	Slightly Toxic to Aquatic Life	Not Toxic to Aquatic Life	Not Available	Not Toxic to Aquatic Life	Not Available
LC50/96 Hour Value for Fish	>100 mg/l	Not Available	Not Available	>100 mg/l	Not Available	10 – 100 mg/l	>100 mg/l	10 – 100 mg/l	>100 mg/l	Not Available
Bioconcentration Factor (eels)	Not Available	Not Available	Not Available	Not Available	2.3	Not Available	Not Available	<100	<100	Not Available

Source: MallincKrodt Baker, Inc., http://www.jtbaker.com/msds/

To estimate the amount of wastewater projected to be generated by the proposed 1999 amendments, it is anticipated that current coating equipment (i.e., spray guns, rollers, and brushes) clean-up practices of using water will continue into the future. Table 4-15 illustrates the "worst-case" potential increase of waste material likely to be received by POTWs in the district as a result of implementing the amendments to the 1997 AQMP.

The results of the analysis illustrated in Table 4-15 are considered to be a "worst-case" analysis that considerably overestimates potential wastewater impacts from implementing control measures CTS-09 and FUG-05. For example, U.S. EPA in its report to Congress entitled "Study of Volatile Organic Compound Emissions from Consumer and Commercial Products" (1995) evaluated consumer products to determine which categories were likely to be disposed of to POTWs. The study found that the likelihood of paints, primers, and varnishes being disposed of to POTWs was low. Therefore, this category was not evaluated for its VOC emission impacts on POTWs. This suggests that the presence of solvents from this category of consumer products in wastewater streams is very low compared to the total volume of solvents being disposed of from other consumer product categories.

TABLE 4-15

Projected POTW Impact from Reformulated Coatings

Year	POTW Average Daily Flow[a] (mgd) [e]	POTW Capacity[b] (mgd)	Waste Disposal Daily Flow[c] (mgd)	Total Impacts[d] (% Increase)	Significant Yes/No
1999	1208.91	1456.11	0.00	0.0000	N/A
2000	1208.91	1456.11	0.02	0.0016	No
2001	1208.91	1456.11	0.03	0.0018	No
2002	1208.91	1456.11	0.03	0.0019	No
2003	1208.91	1456.11	0.03	0.0020	No
2004	1208.91	1456.11	0.03	0.0022	No
2005	1208.91	1456.11	0.03	0.0024	No
2006	1208.91	1456.11	0.04	0.0026	No
2007	1208.91	1456.11	0.04	0.0028	No
2008	1208.91	1456.11	0.04	0.0030	No
2009	1208.91	1456.11	0.05	0.0032	No
2010	1208.91	1456.11	0.05	0.0035	No

[a] 1996 total average daily wastewater flows handled by POTWs in the district as reported to the California State Water Board.

[b] 1996 total average daily capacity of POTWs in the district as reported to the California State Water Board.

[c] Assumes that one gallon of water will be used to clean-up equipment for every gallon of coating applied. The figures for Waste Disposal Flow expressed in mgy are converted to mgd by dividing by 365.

mgd = millions of gallons per day

In addition, as discussed earlier, waterborne formulations are increasingly becoming less toxic than current coating and solvent formulations. To that extent, it is likely that adverse impacts to water quality from toxic constituents will actually decline as compared to the existing situation.

The potential increase in wastewater volume generated by the proposed 1999 amendments is considered to be well within the existing and projected capacity of POTWs in the district. Hence, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing control measures CTS-09 and FUG-05 are not considered significant. With the increasing trend toward less toxic waterborne formulations, it is likely that there will be fewer or less severe impacts to waste water streams.

Based upon the preceding analyses, the proposed 1999 amendments are not expected to create significant adverse water resource impacts for the following reasons. First, the current trend in coating and solvent technologies is to move away from using hazardous materials to using less or non-hazardous waterborne technologies. This trend may be the result of increasingly stringent state and federal regulations relative to hazardous materials, as well as the potential for increased liability associated with promoting or using hazardous materials. Second, experienced users are expected to properly dispose of waste generated from the use of low-VOC waterborne formulations. Third, public outreach programs are anticipated to further inform the public and affected facilities as to the proper disposal methods for low-VOC waterborne formulations. Fourth, even if waste materials generated from coatings application are disposed of improperly, the use of replacement solvents would not incrementally increase water quality impacts above the impacts associated with the use of current conventional solvents. Fifth, based upon future projections, district POTWs are expected to be able to handle any incremental increase in waste materials generated from clean-up practices associated with the use of low-VOC waterborne formulations. Finally, as discussed in the preceding "Water Demand Impacts" section, to date, monitoring and sampling of industrial wastewater streams reveals no appreciable increase of waste materials generated from the use of low-VOC waterborne cleaning solvents from the recent amendments to Rule 1171. As a result, water quality impacts will likely decline compared to current disposal practices.

In addition, the SCAQMD remains committed to continue the public outreach and consultation with local sanitation districts according to the mitigation measures for potential wastewater impacts as set forth in the SCAQMD Governing Board Resolutions for the 1996 amendments to Rule 1171 and 1997 amendments to Rule 1122.

PROJECT-SPECIFIC MITIGATION MEASURES: None required.

REMAINING IMPACTS: Since water quality impacts are not significant, no adverse impacts remain. Even if twice as many facilities used reformulated low VOC coating or

solvent materials as assumed in this analysis, water quality impacts from the proposed 1999 amendments would not be considered significant because the increased effluent from twice as many facilities would still constitute a small percentage of the total future waste water generated in the district.

CUMULATIVE IMPACTS: In the 1997 AQMP Final EIR (SCH #96011062), the SCAQMD concluded that the implementation of the 1997 AQMP would cumulatively result in significant water quality impacts. In particular, the SCAQMD found that the implementation of control measures associated with coating and solvent reformulation, dust suppressants, and air pollution control equipment (e.g., carbon absorbers) would result in cumulative significant impacts. However, since the adoption of the 1997 AQMP by the SCAQMD's Governing Board, SCAQMD staff has subsequently determined that cumulative water quality impacts from the implementation of the 1997 AQMP and the amendments to the 1997 AQMP have not occurred. Specifically, in the context of surface water and ground water quality impacts, information obtained through various SCAQMD rule making efforts initiated after the adoption of the 1997 AQMP reveals that water quality impacts are not occurring (e.g., Rule 1171 monitoring and sampling) or are unlikely to occur (e.g., Rule 1113 waste material survey). Based upon information from these subsequent rule-making efforts, the conclusion regarding water quality impacts is hereby revised from significant to unavoidable, but not significant.

In the context of POTW water quality impacts, cumulative water quality impacts from the implementation of control measures CTS-09 and FUG-05 are not considered to be cumulatively considerable as defined by CEQA Guidelines §15065(c) for the following reason. Although implementing these control measures may incrementally increase POTW water quality impacts in the district, this increased demand does not generate a significant adverse water demand impact, because it does not exceed any water resources threshold of significance. Therefore, these incremental impacts are not considered cumulatively considerable. CEQA Guidelines §15130(a), states in pertinent part, "Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a lead agency need not consider that effect significant …." Therefore, cumulative water quality impacts are concluded to be not significant.

CUMULATIVE IMPACT MITIGATION: None required.

ENERGY

In reviewing the potential environmental impacts associated with the amendments to the 1997 AQMP, SCAQMD staff identified possible energy/mineral resources impacts (see Table 4-16) that could arise due to the future implementation of control measures CTS-09 and FUG-05. New control measures FUG-06 and RFL-02(P2) were also evaluated for potential energy impacts and none were identified.

TABLE 4-16

Control Measures with Potential Energy/Mineral Resources Impacts

CONTROL MEASURES	CONTROL MEASURE DESCRIPTION (POLLUTANT)	CONTROL METHODOLOGY[a]	IMPACT
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources (VOC)	Thermal Oxidizers.	Potential increased consumption of fossil fuels
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources (VOC)	Thermal Oxidizers.	Potential increased consumption of fossil fuels

It is envisioned that facilities subject to these control measures will have to install air pollution control equipment (e.g., thermal oxidizers) in order to meet the control measures' emission targets. The construction and operation of air pollution control equipment will involve the consumption of fossil fuels such as a diesel, gasoline, and natural gas.

Significance Criteria

The proposed project will be considered to have significant adverse energy/mineral resources impacts if it:

- Results in the use of fuel or energy in a wasteful manner, or
- Results in substantial depletion of existing energy resource supplies, or
- Encourages activities that will result in the use of large amounts of fuel or energy resources.

Energy / Mineral Resources Effects

Construction-Related Impacts

PROJECT-SPECIFIC IMPACT: During the construction phase, diesel and gasoline fuel will be consumed in construction equipment portable equipment (e.g., generators and compressors) used to weld, cut, and grind metal structures and by construction workers' vehicles traveling to and from construction sites. To estimate the "worst-case" energy impacts associated with the construction phase of control measures CTS-09 and FUG-05, the SCAQMD assumed that portable equipment used to weld, cut, and grind

metal structures would be operated up to 500 hours in a year (8 hours per day for 60 days). The reader is referred to Appendix B for the assumptions used by the SCAQMD to estimate fuel usage associated with the implementation of control measures CTS-09 and FUG-05.

To estimate construction workers' fuel usage per commute round trip, the SCAQMD assumed that workers' vehicles would get 20 miles to the gallon and would travel 40 miles round trip to and from the construction site in one day. Table 4-17 lists the projected energy impacts associated with the proposed 1999 amendments.

TABLE 4-17

Total Projected Fuel Usage for Construction Activities

Year	Projected Basin-wide Fuel Demand[a] (mmgal/yr)	Total CM[b] Fuel Usage (mmgal/yr)	Total Impact % Above Baseline	Significant Yes/No
Diesel Usage				
2000	1,035	0.067	0.0065	No
2005	1,158	0.067	0.0058	No
2010	1,250	0.067	0.0054	No
Gasoline Usage				
2000	5,589	0.081	0.0014	No
2005	5,501	0.081	0.0015	No
2010	5,421	0.081	0.0015	No

[a] Figures taken from Table 3.3-10 of the 1997 AQMP Final EIR

[b] Estimated fuel usage from the implementation of control measures CTS-09 and FUG-05. Diesel usage estimates are based on portable construction equipment operation. Gasoline usage estimates are derived from workers' vehicle daily trips to and from work.

Operational Energy Impacts

PROJECT-SPECIFIC IMPACT: Any operational natural gas impacts associated with implementing control measure CTS-09 are attributable to fuel consumed in thermal oxidizers used by affected facilities to reduce VOC emissions. To estimate natural gas fuel usage from thermal oxidizer operation, the SCAQMD assumed that the estimated 52 units (one unit per facility) would operate 10.8 hours per day, six days per week, 52 weeks per year and fire natural gas only. Table 4-18 lists the projected natural gas impacts associated with the operational phase of the proposed 1999 amendments. The complete methodology and assumptions that the SCAQMD used to estimate the operational fuel usage from thermal oxidizer operation are contained in Appendix B.

TABLE 4-18

Total Projected Natural Gas Usage for Thermal Oxidizer Operations

Year	Projected Natural Gas Demand[a] (mmcf/yr)	Projected Natural Gas Supply[b] (mmcf/yr)	Total CM[c] Natural Gas Usage (mmcf/yr)	Total Impact % of Remaining Capacity	Significant Yes/No
2000	1,382,334	1,646,150	397	0.15	No
2010	1,557,528	1,646,150	397	0.45	No

[a] Figures taken from Table 3.3-6 of the 1997 AQMP Final EIR

[b] Figure taken from Table 3.3-8 of the 1997 AQMP EIR. The figure was multiplied by 365 days to get $mmft^3$ per year. As a worst case assumed that supply would remain constant from 2000 through 2010.

[c] Estimated natural gas usage from the implementation of control measure CTS-09. To get mmcf, divide the mmbtu figure in Appendix B by the heating value of natural gas (1050 mmbtu/mmcf).

Electrical energy impacts (estimated to be approximately 6,371 kW) associated with ancillary equipment (e.g., fans, motors, etc.) used in conjunction with the thermal oxidizers are not analyzed for the following reasons. Almost 75 percent of the electricity used in the district is imported from out-of-state power plants. Any additional electricity needed to power electric fans or motors would most likely be provided by out-of-state power plants. Therefore, the SCAQMD does not anticipate that additional fuel will be used in in-district power plants to provide electricity to affected facilities. In the event that additional fuel is needed to meet affected facilities' electrical demands, the consumption of fuel would be for the purpose of aiding facilities in complying with control measure CTS-09. The consumption of fuel to comply with air quality regulations is not considered a wasteful use of energy. Therefore, fuel consumed in in-district power plants to generate electricity additional electricity for electric fans or motors used in conjunction with thermal oxidizers needed to comply with control measure CTS-09 is not considered to result in significant adverse energy impacts. Furthermore, the small amount of additional fuel that may be used to generate electricity would be negligible compared to existing supplies, and, thus, would not substantially deplete existing energy resources.

Therefore, based on the foregoing analysis, the SCAQMD has determined that the equipment and vehicles needed for construction- and operational-related activities associated with the implementation of control measure CTS-09 is necessary and will not use energy in a wasteful manner. There will be no substantial depletion of energy resources nor will significant amounts of fuel be needed when compared to existing supplies. Furthermore, if additional fuel is needed to generate electricity for electric fans or motors used in conjunction with thermal oxidizers at affected facilities, it would not be a wasteful use of energy nor substantially deplete existing energy resources. Thus, there are no significant adverse energy/mineral resources impacts associated with the implementation of control measure CTS-09.

PROJECT SPECIFIC MITIGATION MEASURES: No mitigation measures are required.

REMAINING IMPACTS: Since energy/mineral resources impacts are not significant, no adverse impacts remain.

CUMULATIVE IMPACTS: In the context of energy impacts, cumulative energy impacts from the implementation of control measure CTS-09 is not considered to be cumulatively considerable as defined by CEQA Guidelines §15065(c) for the following reason. Future energy supplies can accommodate increased natural gas demand from the proposed project. Energy demand from the proposed project would constitute a small percentage of the total future energy demand in the district. Finally, increased demand for energy resources generated by the proposed 1999 amendments is not considered to be a wasteful use of energy resources. Therefore, these incremental impacts are not considered cumulatively considerable. CEQA Guidelines §15130(a), states in pertinent part, "Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a lead agency need not consider that effect significant…." Therefore, cumulative energy impacts are concluded to be not significant.

Since project-specific energy/mineral resources impacts were found to be insignificant, significant adverse cumulative energy/mineral resources impacts from the amendments to the 1997 AQMP are not expected. This conclusion is consistent with the conclusion regarding cumulative energy impacts in the Final EIR for the 1997 AQMP.

CUMULATIVE IMPACT MITIGATION: No cumulative impact mitigation measures are required.

SOLID/HAZARDOUS WASTE

One way to evaluate sold/hazardous waste impacts is to determine if the proposed project or any components therein will result in a need for new landfill capacity. As indicated in Table 4-19, implementing control measures CTS-09 and FUG-05 may have solid hazardous waste impacts. New control measures FUG-06 and RFL-02(P2) were also evaluated for potential solid hazardous waste impacts and none were identified. The impact analysis conducted for solid/hazardous waste has determined that the proposed amendments to the 1997 AQMP will have a limited effect on solid waste disposal. The increase in disposable wastes that may result from control measures CTS-09 and FUG-05 is described in the section below.

TABLE 4-19

Control Measures with Potential Solid/Hazardous Waste Impacts

CONTROL MEASURES	CONTROL MEASURE DESCRIPTION (POLLUTANT)	CONTROL METHODOLOGY[a]	IMPACT
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources (VOC)	Reformulated low-VOC content coatings and solvents for some applications.	Potential increase in disposable waste
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources (VOC)	Reformulated low-VOC content coatings and solvents for some applications.	Potential increase in disposable waste

The use of low-VOC waterborne or exempt solvent-borne coating formulations to reduce VOC emissions at affected facilities may result in additional solid waste impacts because reformulated coatings may not have as long of a useful lifetime as conventional coatings. Potential problems include freeze-thaw, shorter pot life, and potential shelf life problems). Solid or hazardous waste impacts are not expected from low-VOC waterborne solvent formulations. This is because the reformulated solvents are in a liquid rather than a solid from and will be recycled or potentially dumped on the ground or into the sanitary sewer system or storm drains, which constitutes a water quality impact. See water quality analysis above.

Assumptions Used in The Solid Waste Analysis

This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in the state of California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

Significance Criteria

The project will be considered to have significant adverse solid/hazardous waste impacts if the following criteria are met by the project in each district:

- The generation and disposal of nonhazardous or hazardous wastes that exceed the capacity of designated landfills.

Solid/Hazardous Waste Impacts

PROJECT-SPECIFIC IMPACTS: In recent SCAQMD rulemaking efforts (e.g., Rule 1113) industry has alleged that the lowering of VOC content limits for various coatings could result in the following:

- Low-VOC coating formulations targeted by the amendments to the 1997 AQMP will not have the same freeze-thaw capabilities as existing coatings and, therefore, may spoil during transport from mild climates to extreme climates resulting in that load being discarded into a landfill.

- Low-VOC coating formulations targeted by the proposed 1999 amendments will have shorter shelf lives and, therefore, a percentage of the manufacturer's inventory will have to be landfilled because the coatings have gone bad in the can over time.

- More two-component systems, which on the average have a shorter pot life compared to conventional coatings, may be used to meet the emission targets of the amendments to the 1997 AQMP. As a result, low-VOC coating formulations could solidify in the can during coating application requiring the unusable portion of the coatings to be discarded into landfills.

SCAQMD staff evaluation of coatings product data sheets during recent rulemaking efforts tends to confirm the assertion that low-VOC coating formulations have a shorter pot life and a shorter shelf life. Information on freeze-thaw characteristics was generally not available. To estimate solid waste impacts associated with implementing control measures CTS-09 and FUG-05, staff assumed as a "worst-case" that, starting in the year 2000 when some aspects of the control measures are implemented, solid wastes would increase as follows:

- five percent of all affected coatings would be landfilled due to freeze–thaw problems;

- one percent of all affected coatings would be landfilled due to a shelf-life problems; and,

- 10 percent of all coatings would be landfilled due to pot-life problems.

According to the resin manufacturers and coating formulators, solidified coatings would not be considered a hazardous waste. Therefore, for this solid waste analysis, the SCAQMD assumed that all the landfilled material would be considered non-hazardous waste.

Table 4-20 highlights the estimated nonhazardous material that may be landfilled if industry's assertions are accurate. Table 4-20 also shows whether the landfilling of nonhazardous material associated with the implementation of the amendments to the 1997 AQMP will be considered significant.

TABLE 4-20

Anticipated Solid Waste Impacts Associated with the Implementation of Control Measures CM CTS-09 and FUG-05[a]

Year	Land fill Capacity tons/day	Freeze-Thaw Disposal[b] tons/day	Shelf-Life Disposal[c] tons/day	Pot life Disposal[d] tons/day	Total Disposal tons/day	Total Impact % Capacity	Significant Yes/No
1999	111,198	0.0	0.0	0.0	0.0	0.0000	N/A
2000	111,198	6.2	1.2	12.4	19.9	0.0179	No
2001	111,198	6.7	1.3	13.4	21.5	0.0193	No
2002	111,198	7.2	1.4	14.5	23.2	0.0208	No
2003	111,198	7.8	1.6	15.6	25.0	0.0225	No
2004	111,198	8.4	1.7	16.9	27.0	0.0243	No
2005	111,198	9.1	1.8	18.3	29.2	0.0263	No
2006	111,198	9.9	2.0	19.7	31.5	0.0284	No
2007	111,198	10.6	2.1	21.3	34.1	0.0306	No
2008	111,198	11.5	2.3	23.0	36.8	0.0331	No
2009	111,198	12.4	2.5	24.8	39.7	0.0357	No
2010	111,198	13.4	2.7	26.8	42.9	0.0386	No

[a] SCAQMD emission fee billing data for the years 1996-1997 was used to estimate projected coating and solvent usage from affected facilities. It is projected that coating and solvent usage will increase by 8 percent per year. To convert gallons to tons, the SCAQMD assumed that the coatings had an average density of 10.5 pounds per gallon.

[b] Assumed that five percent of all coatings affected by the implementation of control measures CM CTS-09 and FUG-05 would be landfilled.

[c] Assumed that one percent of all coatings affected by the implementation of control measures CTS-09 and FUG-05 would be landfilled.

[d] Assumed that 10 percent of all coatings affected by the implementation of control measures CTS-09 and FUG-05 would be landfilled.

As shown in Table 4-20, even if some low-VOC coating formulations are landfilled due to freeze-thaw, shelf life, or pot-life problems, the total amount of solid waste material deposited in district landfills will not create a significant solid waste impact. It should be noted that the above analysis overestimates the actual solid waste impacts associated with the implementation of the proposed 1999 amendments for several reasons. First it is not likely that affected facilities will simply dispose of all coatings that have alleged freeze-thaw, shelf-life, and pot life problems. It may be possible that some of these coatings can be reused for various other purposes, such as painting over graffiti, etc.

Second, discussions with manufacturers of low-VOC resin technologies have indicated that the inclusion of surfactants will help eliminate freeze-thaw and shelf-life problems. Lastly, when facility coating applicators become familiar with appropriate application techniques required for applying low-VOC two component systems, pot-life problems will decrease significantly or be eliminated altogether since the applicators will be able to more accurately estimate the correct amount of coating to be mixed to minimize waste. It is expected that it could take up to two years for coating applicators to learn proper application techniques for the application of low-VOC two component systems. Therefore, the amount of pot-life disposal shown in Table 4-20 above is expected to drop to negligible levels starting in 2002.

PROJECT-SPECIFIC MITIGATION MEASURES: No mitigation measures are required.

REMAINING IMPACTS: Since solid/hazardous waste impacts are not significant, no adverse impacts remain.

CUMULATIVE IMPACTS: Cumulative solid waste impacts from the implementation of control measures CTS-09 and FUG-05 are not considered to be cumulatively considerable as defined by CEQA Guidelines §15065(c). Although implementation of these control measures may incrementally increase solid waste impacts in the district, this increased demand does not generate a significant adverse solid waste impact, because it does not exceed any solid waste threshold of significance. Therefore, these incremental impacts are not considered cumulatively considerable. CEQA Guidelines §15130(a), states, "Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a lead agency need not consider that effect significant …."

It is important to remember that state law requires hazardous waste generators to attempt to recycle their wastes before disposing of them. The California EPA's Office of Environmental and Health Hazards Assessment (OEHHA) has implemented a Hazardous Waste Exchange program to promote the use, reuse, and exchange of hazardous wastes. The program is designed to assist generators of hazardous wastes to recycle their wastes off-site and encourage the reuse of hazardous wastes (i.e., using someone else's waste as a feedstock). The Department also publishes a directory catalog of industrial waste recyclers annually so that industries will know where to buy, sell, or exchange their wastes (Claudia Moore, DHS, 1994).

CUMULATIVE IMPACT MITIGATION: None required.

EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental topics below were analyzed to determine if the proposed project would create significant impacts in any of these areas. For all the environmental topics discussed below, no significant direct or indirect impacts were identified.

Land Use and Planning

Land use authority falls solely under the purview of the local governments and the SCAQMD is specifically excluded from infringing on existing city or county land use authority (California Health & Safety Code § 40414). Land use authority is a component of local planning. The amendments to the AQMP do not call for any changes in the locally adopted general plans and, therefore, will not significantly adversely affect land use.

Population and Housing

California Health and Safety Code § 40460(b) stipulates that SCAG, with the assistance of counties and cities, is responsible for preparing and approving the portions of the AQMP related to regional demographic projections on which pollutant emissions are based. The 1997 AQMP is based on the population projections developed by SCAG and included in the RCP&G. According to the RCP&G, population projections in the four-county region should increase by approximately seven million people by 2015. The RCP&G EIR deemed that increase to be insignificant. For the purpose of this analysis, population would be significantly adversely affected if implementation of the proposed 1999 amendments would result in a population growth that is not consistent with the policies of the general plans of local jurisdictions. Any impact implementation of the proposed 1999 amendments might have on the projected distribution of population growth is expected to be consistent with the general plans of local jurisdictions within the region. This impact is therefore considered insignificant.

There are no additional housing demands anticipated from implementation of the proposed 1999 amendments nor are there any measures that would affect existing housing for the same reasons cited above.

Geology and Soils

There are no new measures proposed in the amendments to the 1997 AQMP with the potential to impact surface permeability, cause excessive runoff or possible erosion of downstream soils, and therefore, these activities were found to be insignificant. Although the proposed 1999 amendments may require installation of control equipment or other minor modifications, these modifications would occur at exiting

industrial/commercial facilities. As a result, the proposed 1999 amendments are not expected to significantly affect geology or soils.

Transportation/Circulation

The proposed 1999 amendments are expected to generate 56 additional vehicle trips from construction worker daily commutes. However, these trips are temporary and are dispersed throughout the district. The minor increase in commute trips is not anticipated to result in significant adverse changes to existing transit systems or transportation corridors. Existing transit systems in the district will not be diminished, eliminated or affected in any way as a result of the implementation of the amendments to the 1997 AQMP. Therefore, the proposed 1999 amendments will not result in any significant adverse transportation/circulation impacts.

Biological Resources

The proposed 1999 amendments are not anticipated to cause any widespread adverse change that would negatively alter the overall character or distribution of plant life in the district. The primary cause of adverse impacts to plant life in the district is population growth leading to new development and air pollution. Implementation of the AQMP is not anticipated to result in additional new construction sites, nor will it affect population growth and the distribution of population growth. In general, the widespread reduction in air contaminants due to implementation of the proposed 1999 amendments will benefit plant communities.

Additionally, the proposed 1999 amendments are not expected to adversely affect animal species or animal populations for the same reasons cited above. As in humans, positive health affects in animals would occur from the reduction of air contaminants. Indirect benefits would occur because of the ecological interrelationship between animals and their environment. Improvement in plant life as a result of reducing the destructive effects of pollution on plants will also benefit animal life.

Noise

Consideration was given to potential noise impacts from construction activities and add-on pollution control equipment, which may result from implementation of control measures in the proposed 1999 amendments. Construction activities arising from the proposed project would consist mainly of the installation of add-on equipment and would involve the use of heavy-duty equipment (bulldozers, etc.) and fugitive dust controls. The anticipated add-on equipment would not significantly increase the noise levels of individual pieces of equipment. Fugitive dust is typically controlled by non-noise intensive methods such as spraying active work sites with water or other types of

dust suppressants. In addition, pollution control at commercial or industrial facilities does not add appreciably to the noise environment already existing at such facilities. Local noise ordinances and Occupational Safety and Health Administration (OSHA) worker safety regulations are expected to ensure that potential noise impacts are not significant. For these reasons, potential noise impacts from implementing the amendments to the 1997 AQMP were determined to be insignificant. This conclusion is consistent with the conclusion regarding noise impacts in the EIR for the 1997 AQMP.

Public Services

Since established permitting programs and procedures to handle hazardous situations, such as flammability of acetone in reformulated coatings, are in place, the impact on fire departments will not be significant. Also, since current high-solvent coatings are formulated with toxics, which tend to be more flammable than waterbased or low-VOC coatings, flammability hazards from future reformulated products are expected to be equivalent to or less than they are for conventional coating formulations. No significant impacts to public services are anticipated as a result of implementation of the amendments to the 1997 AQMP.

Aesthetics/Recreation

There are no adverse aesthetic impacts associated with the proposed 1999 amendments. There is very little construction associated with the proposed 1999 amendments; none of which would obstruct any scenic vista or view or create an aesthetically offensive site open to public view.

The proposed 1999 amendments do not include measures that affect existing or future recreational opportunities in the region. Further, the proposed amendments to the proposed project are not expected to result in significant adverse alterations of present or planned land uses which could affect recreation.

No significant light and glare impacts are anticipated since the amendments to the 1997 AQMP is not expected to create additional demand for lighting or reflective materials beyond existing conditions. Implementing the amendments to the 1997 AQMP will not require exposed combustion, additional night lighting or reflective equipment or devices.

Cultural Resources

The proposed 1999 amendments do not include any measures that would result in any adverse impacts to cultural resources in the district. There are several existing laws currently in place that are designed to protect and mitigate potential adverse impacts to cultural resources. As with any construction activity, should archaeological resources be

found during construction of a project to comply with the AQMP, such construction activity will cease until the appropriate agency is contacted and a thorough archaeological assessment is made.

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APPENDIX A

SUMMARY INFORMATION FROM THE 1997 AQMP FINAL EIR

TABLE A-1

Summary of Potential Environmental Impacts and Mitigation Measures
from the 1997 AQMP EIR*

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	MITIGATION	SIGNIFICANCE AFTER MITIGATION	CUMULATIVE IMPACTS
Water Quality	Wastewater impacts from the disposal of reformulated solvents	Provide an outreach and education program for affected parties If measurable water quality effects resulting from implementation of the 1997 AQMP are found by the POTWs, the district shall work with the POTWs and other appropriate agencies to identify the necessary actions to be taken	S	S
	Wastewater impacts from the disposal and clean-up of reformulated coatings	See Above	NS	S
	Wastewater impacts from the use of Chemical dust suppressants	Restrict the use of chemical dust suppressants to those products not prohibited from use by the SWRCB or the RWQCBs	NS	S
	Wastewater impacts from the use of Alternative vehicles (i.e., methanol spills, electric battery disposal, etc.)	No mitigation required	NS	S
	Wastewater impacts from the use of add-on air pollution control	No Mitigation required	NS	S

*** Note: This chart presents the conclusions reached in the Final EIR for the 1997 AQMP. A chart showing similar information for the proposed 1999 Amendments to the 1997 Ozone SIP Revision can be found in Chapter 1 of this document.**

TABLE A-1 (CONTINUED)

Summary of Potential Environmental Impacts and Mitigation Measures
from the 1997 AQMP EIR*

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	MITIGATION	SIGNIFICANCE AFTER MITIGATION	CUMULATIVE IMPACTS
Water Demand	Increased water demand by the use of dust suppressants	Though water suppression may not be disregarded as a control method, additional methods have been identified to reduce dependence on watering	NS	NS
	Increase water demand from the use of tree planting control measures	Require the use of native and drought resistant species Require use of reclaimed or other non-potable water where appropriate and feasible	NS	NS
Air Quality	Emissions from increased energy demand	No mitigation required	NS	NS
	Emissions from the control of stationary sources	No mitigation required		
	Emissions from the implementation of contingency measures	No mitigation required	NS	NS
	Emissions from the implementation of transportation measures	No mitigation required	NS	NS
	Emissions from the use of dust suppressants	No mitigation required	NS	NS
	The generation of toxic air contaminants from the implementation of the 1997 AQMP	No mitigation required	NS	NS

*** Note: This chart presents the conclusions reached in the Final EIR for the 1997 AQMP. A chart showing similar information for the proposed 1999 Amendments to the 1997 Ozone SIP Revision can be found in Chapter 1 of this document.**

TABLE A-1 (CONTINUED)

Summary of Potential Environmental Impacts and Mitigation Measures
from the 1997 AQMP EIR*

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	MITIGATION	SIGNIFICANCE AFTER MITIGATION	CUMULATIVE IMPACTS
	Emissions from market-based programs	The SCAQMD will include restrictions in the rule(s) for area source credits which limit the issuance of credits to those sources which do not generate significant secondary air quality impacts as will be defined during rule making.	NS	NS
	Odors from the implementation of the 1997 AQMP	No mitigation required	NS	NS
Energy	Slight increase in electricity demand (>2%)	No mitigation required	NS	NS
	Slight increase in natural gas demand (>4%)	No mitigation required	NS	NS
	Slight reduction in petroleum fuel demand (-6%)	No mitigation required	NS	NS
	Slight but beneficial increase in demand for other alternative fuels (i.e., methanol, CNG, etc.)	No mitigation required	NS	NS

*** Note: This chart presents the conclusions reached in the Final EIR for the 1997 AQMP. A chart showing similar information for the proposed 1999 Amendments to the 1997 Ozone SIP Revision can be found in Chapter 1 of this document.**

TABLE A-1 (CONTINUED)

Summary of Potential Environmental Impacts and Mitigation Measures
from the 1997 AQMP EIR*

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	MITIGATION	SIGNIFICANCE AFTER MITIGATION	CUMULATIVE IMPACTS
Hazards/Human Health	Slight increase in exposure to hazardous materials from the use of reformulated coatings	Pursuant to Rule 1402, require facilities to perform a screening analysis Use outreach educational programs that would educate coatings users to employ glycol ethers with no or low toxicity or use reformulated products which do not contain glycol ethers Use of an optional averaging provision which should help companies comply with the proposed lower VOC limits Conduct safety reviews for coatings containing potentially hazardous materials	S	S
	Increased exposure to electromagnetic fields	Only open areas, recreation, utilities, drainage structures, parking and roadway uses should be allowed within electric transmission line easements No permanent habitable structures should be located within electric transmission line easements	NS	S

*** Note: This chart presents the conclusions reached in the Final EIR for the 1997 AQMP. A chart showing similar information for the proposed 1999 Amendments to the 1997 Ozone SIP Revision can be found in Chapter 1 of this document.**

TABLE A-1 (CONCLUDED)

Summary of Potential Environmental Impacts and Mitigation Measures
from the 1997 AQMP EIR*

ENVIRONMENTAL TOPIC	POTENTIAL IMPACT	MITIGATION	SIGNIFICANCE AFTER MITIGATION	CUMULATIVE IMPACTS
Solid/Hazardous Waste	Increased waste due to electric batteries	No mitigation required	NS	NS
	Increased solid waste from PM10 control measures	No mitigation required	NS	NS
	Increased solid waste from the use of air pollution control equipment	Recycling and reusing spent carbon	NS	NS
	Increased solid waste from the early retirement light- and heavy-duty vehicles	No mitigation required	NS	NS

*** Note: This chart presents the conclusions reached in the Final EIR for the 1997 AQMP. A chart showing similar information for the proposed 1999 Amendments to the 1997 Ozone SIP Revision can be found in Chapter 1 of this document.**

ALTERNATIVE 1 - NO PROJECT (1994 OZONE SIP)

Alternative 1 (the No Project Alternative) represents a continuation of the existing 1994 AQMP with several exceptions. First, a revised rule adoptions and implementation schedule has been submitted to the U.S. Environmental Protection Agency (EPA) for inclusion in the SIP. This schedule shifts the projected dates when emission reductions would be achieved. Alternative 1 includes ISR control measures, which were deleted from the 1997 AQMP. Except for those control measures that have already been implemented, Alternative 1 contains a number of control measures that were deleted from the 1997 AQMP, such as the Regional Clean Air Incentives Market (RECLAIM) Program for VOC, which is no longer being pursued by the SCAQMD as a viable market incentives program (see the discussion of Alternative 1 in Chapter 2).

ALTERNATIVE 2 - TEMPORAL/SEASONAL SHIFT CONTROL STRATEGY

Alternative 2 is similar to the 1997 AQMP in that it requires implementation of the same short- and intermediate-term, as well as advanced, control measures during the summer ozone period. During the low ozone formation winter period (defined as November through April), regulated facilities would be allowed to increase VOC emissions by up to 50 percent. This alternative attempted to determine whether or not air quality and health benefits could be maximized from a program that encourages interseasonal shifts of emissions to winter months.

ALTERNATIVE 3 - FUGITIVE DUST VERSUS NOx CONTROL STRATEGY

Alternative 3 is similar to the 1997 AQMP in that it generally requires implementation of the same short- and intermediate-term, as well as advanced, control measures. Instead of reducing PM10 emissions through implementing NO_x control measures which would typically require maximum control effectiveness, Alternative 3 would allow facilities to comply with specified NO_x control rules using less effective compliance options. To make up for this shortfall in NO_x emissions to attain the PM10 standards, Alternative 3 would require implementing fugitive dust control contingency measures CTY 12 - Control Emissions from Paved Roads (formerly BCM-01 (1D and 1E)) and CTY-13 - Further Emission Reductions from Construction and Demolition Activities (Rule 403) (formerly BCM-02). To provide a "worst-case" analysis, this alternative assumes that all NO_x control measures identified in the 1997 AQMP would be implemented, but the control efficiency required would not need to be as great as would be required under the 1997 AQMP.

APPENDIX B

SPREADSHEETS FOR IMPACTS ANALYSIS

ASSUMPTIONS REGARDING SOURCE-SPECIFIC EMISSIONS AT AFFECTED FACILITIES

Permitted emissions sources grouped according to source specific rule were evaluated to determine the most likely method of reducing emissions (e.g., either add-on control equipment or reformulation). Depending upon the coating operation and substrate being coated, it is assumed that emissions would be reduced from approximately 40 percent of these permitted emissions sources using add-on control equipment (thermal oxidizers) and emissions from 60 percent of these permitted sources would be reduced through the use of reformulated coatings or solvents. The percentage breakdown of permitted emissions sources per rule category where emissions are reduced through add-on control equipment or reformulation is provided in the following bullet points. As noted in the bullet points, emissions from some permitted emission source rule categories are expected to be reduced using both add-on control equipment and reformulation. The estimated number of add-on control units for each source specific category of emissions sources is given below.

- 442 - 100 percent Reformulation
- 1102 - 100 percent Reformulation
- 1103 - 50 percent Reformulation, 50 percent Thermal Oxidizers
- 1104 - 100 percent Reformulation
- 1106 - 100 percent Reformulation
- 1107 - 70 percent Reformulation, 30 percent Thermal Oxidizers
- 1113 - 100 percent Reformulation
- 1115 - 100 percent Thermal Oxidizers
- 1122 - 100 percent Reformulation
- 1124 - 100 percent Thermal Oxidizers
- 1125 - 50 percent Reformulation, 50 percent Thermal Oxidizers
- 1128 - 100 percent Reformulation
- 1130 - 50 percent Reformulation, 50 percent Thermal Oxidizers
- 1130.1 - 50 percent Reformulation, 50 percent Thermal Oxidizers
- 1136 - 90 percent Reformulation, 10 percent Thermal Oxidizers
- 1145 - 50 percent Reformulation, 50 percent Thermal Oxidizers
- 1151 - 100 percent Thermal Oxidizers
- 1162 - 100 percent Thermal Oxidizers
- 1164 - 100 percent Thermal Oxidizers
- 1168 - 50 percent Reformulation, 50 percent Thermal Oxidizers
- 1171 - 100 percent Reformulation

The above percentages were derived in consultation with SCAQMD coatings permitting engineers and form the basis of this analysis only. When promulgating

the control measures into rules or rule amendments, a project-specific analysis will be prepared and, based upon more detailed information, these numbers are anticipated to change to a slight extent. In any event, the above percentage breakdown represents a "worst-case" analysis.

Potential Construction Emissions Due to the Implementation of CM#97CTS-09

Facility Type	No. of Thermal Oxidizers
#97CTS-09	52

Construction Equipment Hours of Operation

Construction Activity	Equipment Type	Pieces of Equpment	Hrs/day	Crew Size
Portable Equip. Operation	Air Compressor	1	4.00	3
(Actual Construction of	Generator Set	1	4.00	
Thermal Oxidizers)	Welder	1	4.00	

Construction Equipment Combustion Emission Factors

Equipment Type*	CO	VOC	NOx	SOx	PM10
	lb/BHP-hr	lb/BHP-hr	lb/BHP-hr	lb/BHP-hr	lb/BHP-hr
Air Compressor < 50 HP	0.011	0.002	0.018	0.002	0.001
Gen. Set <50 HP (2-strk)	0.011	0.002	0.018	0.002	0.002
Welder < 50 HP	0.011	0.002	0.018	0.002	0.001

Source: Nonroad Engine and Vehicle Study Report, EPA 460/3-91-02, November 1991

*Assumed equipment is diesel fueled.

Construction Equipment Ratings and Load Factors

Equipment Type*	Rating HP	Load Factor %
Air Compressor < 50 HP	9	56
Generator Set < 50 HP	11	68
Welder < 50 HP	19	51

Source: Nonroad Engine and Vehicle Study Report, EPA 460/3-91-02, November 1991

*Assumed equipment is diesel fueled.

Potential Construction Emissions Due to the Implementation of CM#97CTS-09

Construction Vehicle (Mobile Source) Running Emission Factors

Construction Related Activity	CO	VOC	NOx	Combustion PM10	Tire Wear PM10	Brake Wear PM10
	g/mile	g/mile	g/mile	g/mile	g/mile	g/mile
Offsite (Construction Worker)*	4.33	0.31	0.86	0.00	0.01	0.01

Source: CARB's MVEIG Program, 1999 (Summertime)
*Light-Duty Trucks - Cat, traveling at 35 mph

Construction Worker Start-Up Emission Factors

Vehicle	CO	VOC	Hot Soak VOC	Dirunal VOC	NOx
	g/mile	g/mile	g/mile	g/mile	g/mile
Offsite (Construction Worker)*	44.14	3.90	0.66	0.70	2.82

Source: CARB's MVEIG Program, 1999 (Summertime)
*Light-Duty Trucks - Cat, traveling at 35 mph

Construction Worker Number of Trips, Trip Length, and Start-ups

Vehicle	Number of One-Way Trips/Day	Trip Length (miles)	Start-Ups*
Offsite (Construction Worker)*	3	20	2

Source: CARB's MVEIG Program, 1999 (Summertime)
*Light-Duty Trucks - Cat, traveling at 35 mph

Incremental Increase in Combustion Emissions from Construction Equipment

Equipment Type	CO	VOC	NOx	SOx	Combustion PM10
	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Air Compressor < 50 HP	11.53	2.10	18.87	2.10	1.05
Gen. Set <50 HP (2-strk)	17.11	3.11	28.01	3.11	2.33
Welder < 50 HP	22.17	4.03	36.28	4.03	2.02
Total	**51**	**9**	**83**	**9**	**5**

Potential Construction Emissions Due to the Implementation of CM#97CTS-09

Incremental Increase in Combustion Emissions from Construction Workers' Vehicles

Vehicle	CO lbs/day	VOC lbs/day	NOx lbs/day	Combustion PM10 lbs/day	Tire Wear PM10 lbs/day	Brake Wear PM10 lbs/day
Offsite (Construction Worker)*	**30**	**7**	**12**	**0**	**0.14**	**0.14**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lbs/day	VOC lbs/day	NOx lbs/day	SOx lbs/day	PM10 lbs/day
Equipment & Workers' Vehicles	**81**	**17**	**95**	**9**	**6**
Significant Threshold	***550***	***75***	***100***	***150***	***150***
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**

Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles

Construction Activity	Total Hours of Operation*	Equipment Type	Equipment HP	Construction Equipment Fuel Usage gal/yr***	Worker's Vehicles Fuel Usage gal/yr**	
Portable Equip. Operation		500 Air Compressor	9	15,444		
(Actual Construction of		500 Generator Set	11	18,876		
Thermal Oxidizers)		500 Welder	19	32,604		
Workers' Vehicles		N/A Light-Duty Trucks	N/A		81,120	
			Total	**66,924**	**81,120**	**148,044**

*Assume actual construction will take approximately three months (60 days/yr, 8 hrs/day).

**Used conversion factor of 0.066 gal/BHP-hr for diesel fired equipment. SCAQMD 1993 CEQA Air Quality Handbook.

***Assume that construction workers' vehicles get 20 mi/gal and round trip length is 40 miles.

***Note*: It is assumed that all coating and solvent usage associated with #97FUG-05 affected facilities will be reformulated**

Potential Operational Emissions Due to the Implementation of CM#97CTS-09

Air Quality Impacts from the Implementation of #97CTS-09 (e.g., Thermal Oxidizers)

Rule No.	No. of Units	CFM to Control Device	MMBTU/ hr Natural Gas Consumed	Heating Value of Natural Gas (MMBTU/ MMcf)	Operating Hours* (hrs/day)	NOx Emission Factor** (lb/MMcf)	TOTAL NOx Emissions (#/day)	VOC Emission Factor# (lb/MMcf)	TOTAL VOC Emissions (#/day)	CO Emission Factor# (lb/MMcf)	TOTAL CO Emissions (#/day)	PM10 Emission Factor# (lb/MMcf)	TOTAL PM10 Emissions (#/day)	SOx Emission Factor# (lb/MMcf)	TOTAL SOx Emissions (#/day)
1103	3	50,000	1.832	1050	10.8	36	**2.04**	7	**0.40**	35	**1.98**	7.5	**0.42**	0.83	**0.05**
1107	4	50,000	1.832	1050	10.8	36	**2.71**	7	**0.53**	35	**2.64**	7.5	**0.57**	0.83	**0.06**
1115	1	100,000	3.646	1050	10.8	36	**1.35**	7	**0.26**	35	**1.31**	7.5	**0.28**	0.83	**0.03**
1124	9	100,000	3.646	1050	10.8	36	**12.15**	7	**2.36**	35	**11.81**	7.5	**2.53**	0.83	**0.28**
1125	3	50,000	1.832	1050	10.8	36	**2.04**	7	**0.40**	35	**1.98**	7.5	**0.42**	0.83	**0.05**
1130	2	10,000	0.488	1050	10.8	130	**1.31**	7	**0.07**	35	**0.35**	7.5	**0.08**	0.83	**0.01**
1130.1	1	10,000	0.488	1050	10.8	130	**0.65**	7	**0.04**	35	**0.18**	7.5	**0.04**	0.83	**0.00**
1136	2	50,000	1.832	1050	10.8	36	**1.36**	7	**0.26**	35	**1.32**	7.5	**0.28**	0.83	**0.03**
1145	5	40,000	1.496	1050	10.8	130	**10.00**	7	**0.54**	35	**2.69**	7.5	**0.58**	0.83	**0.06**
1151	2	10,000	0.488	1050	10.8	130	**1.31**	7	**0.07**	35	**0.35**	7.5	**0.08**	0.83	**0.01**
1162	14	80,000	2.92	1050	10.8	36	**15.14**	7	**2.94**	35	**14.72**	7.5	**3.15**	0.83	**0.35**
1164	3	10,000	0.488	1050	10.8	130	**1.96**	7	**0.11**	35	**0.53**	7.5	**0.11**	0.83	**0.01**
1168	3	10,000	0.488	1050	10.8	130	**1.96**	7	**0.11**	35	**0.53**	7.5	**0.11**	0.83	**0.01**
Total	**52**						**53.96**		**8.08**		**40.38**		**8.65**		**0.96**
						Significant Threshold		55		55		550		150	
						Exceed Significance?		**NO**		**NO**		**NO**		**NO**	

"Worst-Case" Assumptions

* If it is assumed that out off the affected facilities that may install the 52 thermal oxidizers, 10% would operate a thermal oxidizer 24 hrs /day,
15% would operate a thermal oxidizer 16 hrs /day, and 75% would operate a thermal oxidizer 8 hrs /day, the weighted average is 10.8 hours/day.
Thus, as a "worst-case," the SCAQMD assumed that each thermal oxidzer for each rule the facility is subject to would operate 10.8 hrs/day.
The SCAQMD believes this is a "worst-case assumption because it overestimates the hours of operation by not taking into consideration that a thermal oxidizer will not be in use v
(1) coatings are being mixed prior to application; (2) coatings are being changed; (3) coated products are being moved from the application area;
(4) coatings are not being applied in the application area; and (5) spraying equipment is being cleaned.
Additionally, not taken into consideration is the fact that hybrid technology has emerged that allows for the more efficient use of thermal oxidizers.

** Currently, SCAQMD permitting staff requires that thermal oxidizers >2 MMbtu/hr to meet a NOx Concentration of 30 ppm as BACT.
This translates to an emission factor of 36 lb/MMcf.
For thermal oxidizers <2 Mmbtu/hr, the SCAQMD permitting staff uses the EFB default emission factor of 130 lb/MMcf.

\# Currently, the SCAQMD permitting staff uses the EFB default emission factors for CO, VOC, PM10, and SOx when estimating these emissions from all size thermal oxidizers.

***Note*: It is assumed that all coating and solvent usage associated with #97FUG-05 affected facilities will be reformulated**

Potential Operational Energy Demands Due to the Implementation of CM #97CTS-09

	Nos. of Units	Rule No.	Basis Systems Average CFM	Gas Cost ($/hr)	Total Instaneous Power (kW)
			10,000	2.44	
			50,000	9.16	
			100,000	18.23	
10.8 hrs/day, 6 days/wk, 52 wks/yr of Operation (hrs/yr)			**Expand Basis Systems**	**MMBtu/hr (Consumed)**	
			10,000	0.488	28
			40,000	1.496	95
			50,000	1.832	117
			80,000	2.92	187
			100,000	3.646	233
			CFM to Control Device	**MMBtu/yr (Consumed)**	
3370	3	1103	50,000	18,522	351
3370	4	1107	50,000	24,695	748
3370	1	1115	100,000	12,287	233
3370	9	1124	100,000	110,583	1,053
3370	3	1125	50,000	18,522	351
3370	2	1130	10,000	3,289	56
3370	1	1130.1	10,000	1,645	28
3370	2	1136	50,000	12,348	234
3370	5	1145	40,000	25,208	475
3370	2	1151	10,000	3,289	56
3370	14	1162	80,000	137,766	2,618
3370	3	1164	10,000	4,934	84
3370	3	1168	10,000	4,934	84
CTS-09 Thremal Oxidizer Totals	**52**			**378,020 MMBTU/Yr**	**6,371 KW**

***Note*: It is assumed that all coating and solvent usage associated with #97FUG-05 affected facilities will be reformulated**

Potential Water Demand Impacts Due to the Implementation of CM#97CTS-09 and CM#97FUG-09

Year	Population	Water Demand	Water Supply	Coating Usage	Coatings Mfg	Coatings Cleanup	Total CM Water Demand	Total Impacts	Total Impacts
	10x6 people	bgy	bgy	mgy	mgy	mgy	mgy	% Increase	mgd
1996	14.42	1,108.40	1,266.97	6.35	0.00	0.00	0.00	0.0000	0.00
1997	14.71	1,129.36	1,266.97	6.86	0.00	0.00	0.00	0.0000	0.00
1998	15.00	1,150.32	1,266.97	7.40	0.00	0.00	0.00	0.0000	0.00
1999	15.29	1,171.28	1,266.97	8.00	0.00	0.00	0.00	0.0000	0.00
2000	15.58	1,192.24	1,266.97	8.64	8.64	8.64	17.27	0.0014	0.05
2001	15.88	1,213.20	1,266.97	9.33	9.33	9.33	18.65	0.0015	0.05
2002	16.17	1,234.16	1,266.97	10.07	10.07	10.07	20.14	0.0016	0.06
2003	16.46	1,255.12	1,266.97	10.88	10.88	10.88	21.76	0.0017	0.06
2004	16.75	1,276.08	1,266.97	11.75	11.75	11.75	23.50	0.0019	0.06
2005	17.04	1,297.04	1,526.97	12.69	12.69	12.69	25.38	0.0017	0.07
2006	17.34	1,318.00	1,526.97	13.70	13.70	13.70	27.41	0.0018	0.08
2007	17.63	1,338.96	1,526.97	14.80	14.80	14.80	29.60	0.0019	0.08
2008	17.92	1,359.92	1,526.97	15.98	15.98	15.98	31.97	0.0021	0.09
2009	18.21	1,380.88	1,526.97	17.26	17.26	17.26	34.52	0.0023	0.09
2010	18.50	1,401.80	1,526.97	18.64	18.64	18.64	37.29	0.0024	0.10

Potential Water Quality (POTW) Impacts Due to the Implementation of CM#97CTS-09 and CM#97FUG-09

Year	POTW Avg. Daily Flow mgd	POTW Capacity mgd	Coatings Disposal* mgd	Total Impact % Increase
1996	1209.31	1456.11	0.00	0.0000
1997	1209.31	1456.11	0.00	0.0000
1998	1209.31	1456.11	0.00	0.0000
1999	1209.31	1456.11	0.00	0.0000
2000	1209.31	1456.11	0.02	0.0016
2001	1209.31	1456.11	0.03	0.0018
2002	1209.31	1456.11	0.03	0.0019
2003	1209.31	1456.11	0.03	0.0020
2004	1209.31	1456.11	0.03	0.0022
2005	1209.31	1456.11	0.03	0.0024
2006	1209.31	1456.11	0.04	0.0026
2007	1209.31	1456.11	0.04	0.0028
2008	1209.31	1456.11	0.04	0.0030
2009	1209.31	1456.11	0.05	0.0032
2010	1209.31	1456.11	0.05	0.0035

*Wastewater disposal assoicated with the clean-up of equipment used to apply coatings or solvents.

Potential Solid Waste Impacts Due to the Implementation of CM#97CTS-09 and CM#97FUG-09

Year	Landfill Capacity tons/day	Freeze-Thaw Disposal tons/day	Shelf-Life Disposal tons/day	Pot life Disposal tons/day	Total Disposal tons/day	Total Impact % Capacity
1996	111,198	0.0	0.0	0.0	0.0	0.0000
1997	111,198	0.0	0.0	0.0	0.0	0.0000
1998	111,198	0.0	0.0	0.0	0.0	0.0000
1999	111,198	0.0	0.0	0.0	0.0	0.0000
2000	111,198	6.2	1.2	12.4	19.9	0.0179
2001	111,198	6.7	1.3	13.4	21.5	0.0193
2002	111,198	7.2	1.4	14.5	23.2	0.0208
2003	111,198	7.8	1.6	15.6	25.0	0.0225
2004	111,198	8.4	1.7	16.9	27.0	0.0243
2005	111,198	9.1	1.8	18.3	29.2	0.0263
2006	111,198	9.9	2.0	19.7	31.5	0.0284
2007	111,198	10.6	2.1	21.3	34.1	0.0306
2008	111,198	11.5	2.3	23.0	36.8	0.0331
2009	111,198	12.4	2.5	24.8	39.7	0.0357
2010	111,198	13.4	2.7	26.8	42.9	0.0386